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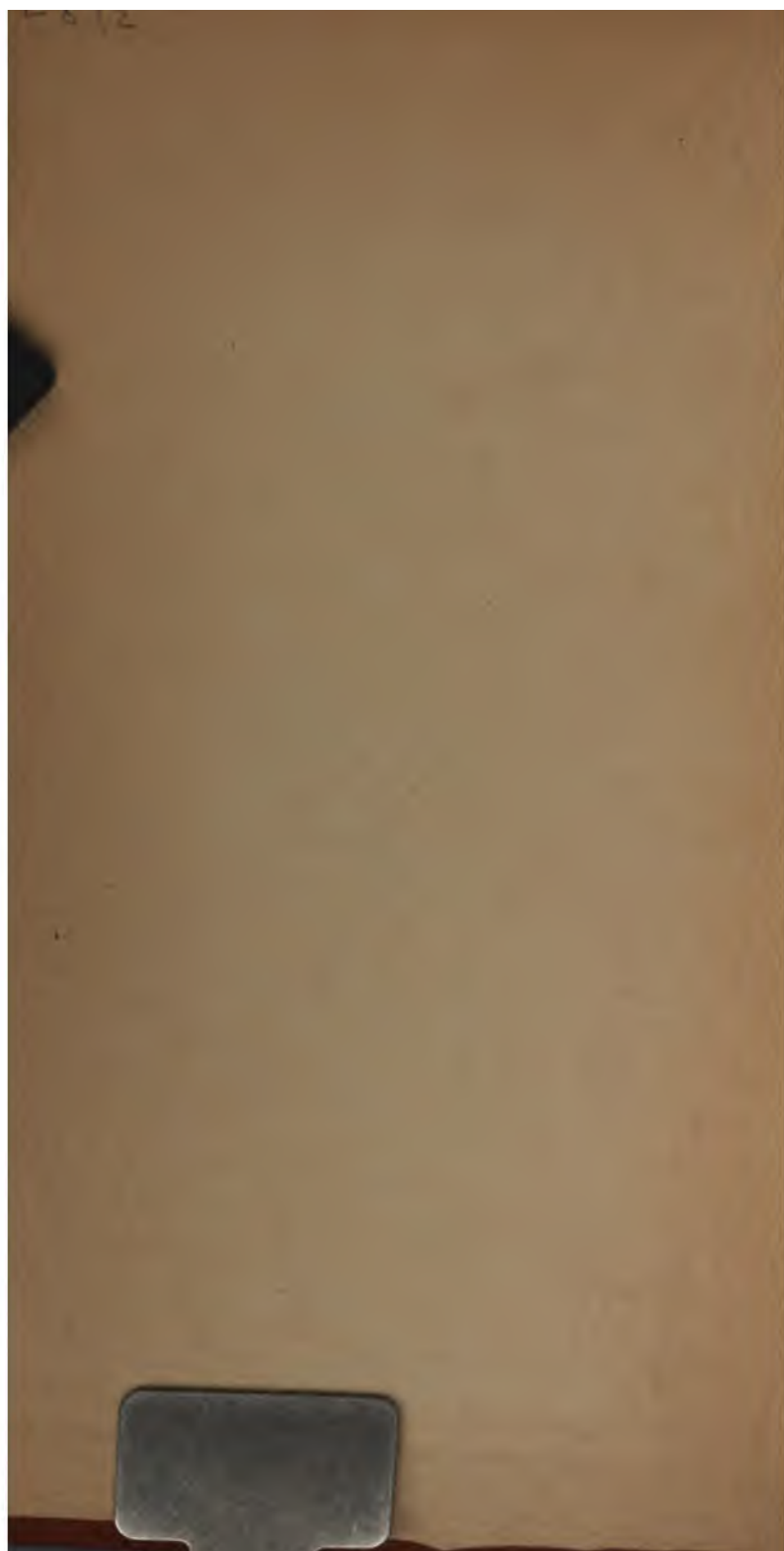
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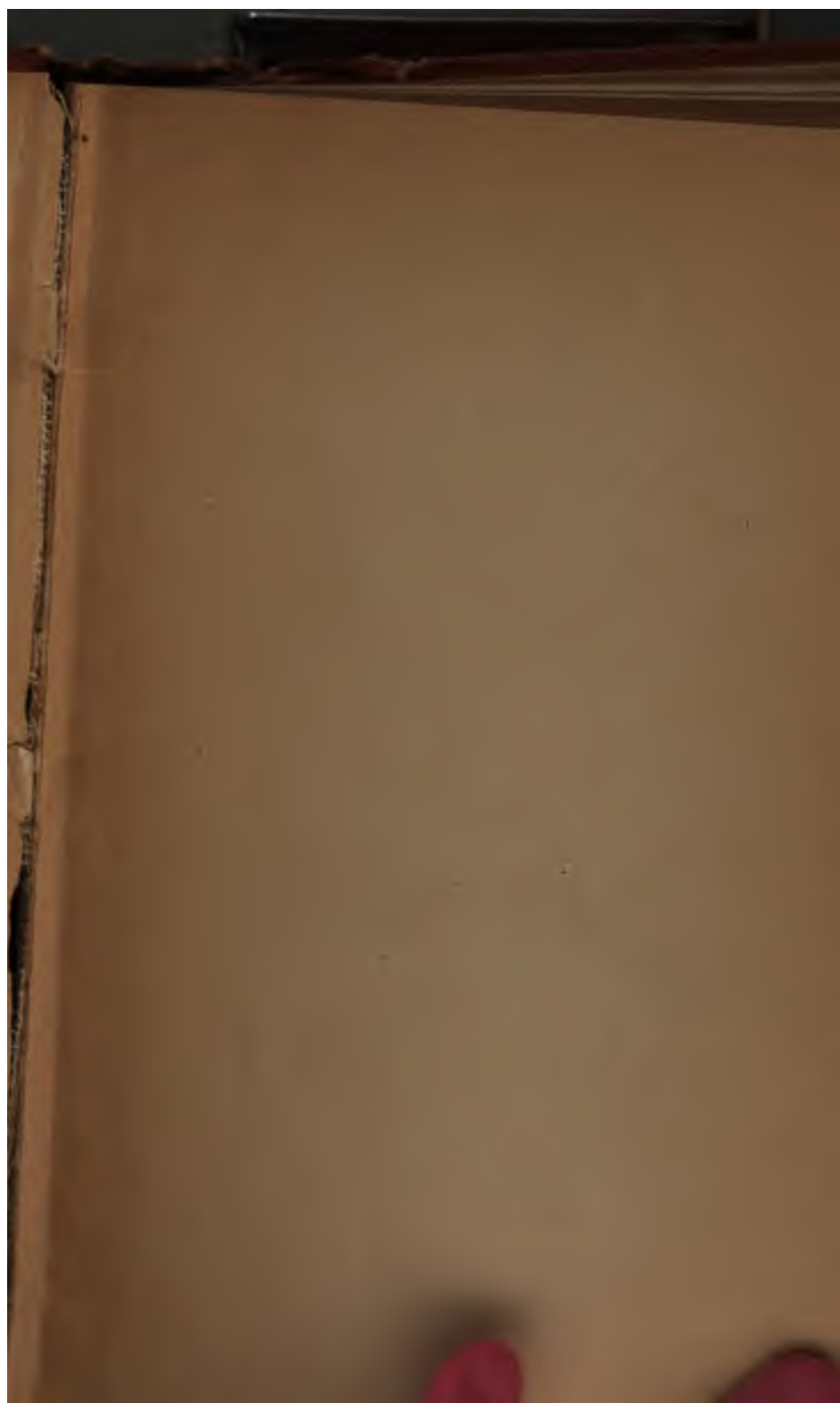
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THE
ZOOLOGICAL RECORD

VOLUME THE FORTY-SECOND

BEING

RECORDS OF ZOOLOGICAL LITERATURE

RELATING CHIEFLY TO THE YEAR

1905.

BY D. SHARP, R. LYDEKKER, R. BOWDLER SHARPE, IGNERA B. J. SOLLAS,
W. T. CALMAN, E. R. SYKES, E. A. SMITH, HELEN M. KEMP, F. SILVESTRI,
A. R. HIRST, MARGARET GRANT, CORA B. SANDERS, E. A. MINSCHIE, AND
H. M. WOODCOCK.

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Explorate solum: sic fit via certior ultra.

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The Editor thanks those Societies and individuals who have forwarded works and papers for the purposes of the Record, and suggests that Societies publishing Zoological Papers would much facilitate the work of the Recorders by forwarding a separate copy of each Zoological Memoir they publish to the Editor for the use of the Recorder. This is preferable to sending the entire volume, because each paper can go directly to the Recorder it concerns.

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PREFACE.

THE appearance of the forty-second Volume of the Zoological Record has been a little delayed in consequence of the arrangements for provisional amalgamation with the Zoology Section of the International Catalogue of scientific literature.

The following passage, extracted from the Report of the Council of the Zoological Society for the year 1905 explains this amalgamation as follows:—

“The annual issues of the ‘Zoological Record’ have long been regarded as amongst the most important services to Zoological Science rendered by the Society. The magnitude of the task has been increasing annually, and in recent years the Zoology Volumes of the International Catalogue of scientific literature, issued by an International Bureau under the auspices of the Royal Society, have to a certain extent covered the same ground. The Council have arranged for a provisional amalgamation of the two undertakings for a period of five years, beginning with the literature for the year 1906, to be published in 1907, and hope that the union will lead to increased efficiency and economy. The ‘Zoological Record’ Committee will remain responsible for the scientific side of the work, and the conjoint Volumes will be issued with numbers and title pages in series with the existing ‘Zoological Record,’ so that, at the end of the period of five years, the Zoological Society may resume its independent control, if the amalgamation be not successful.”

In conformity with this announcement our Volume 1906 will be a joint production of the International Catalogue organisation and of the Record Committee of the Council of the Zoological Society of London. It will be continued on the same general lines as the later Volumes of the Zoological Record, and will be made uniform with the Volumes of the International Catalogue by similar typography and details.

The Editor of the Record anticipates that the higher efficiency expressed by the Council in the paragraph quoted above will be realised.

The usefulness of the Record hitherto has been chiefly due to the amount of work carried out by the Recorders. Of late years their task has been too great. Under the new arrangement it should be considerably reduced. And as we anticipate that the expert knowledge that has been placed at the disposal of the Record Committee will still be continued we have good reason for sanguine anticipations.

It is intended that the Annual Volume shall equal the present Zoological Record in arrangement and facility of use, and that it shall by the efforts of the Regional bureaux of the Zoological Society of London be made superior in completeness to anything that has yet appeared.

The Volume will appear at the customary period of once a year; and no change will be made in the arrangements which the Subscribers to the Zoological Record receive, or the price they pay for, the Annual Volumes.

D. SHARP.

CAMBRIDGE.

December 15th, 1906.

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By the EDITOR.



ALPHABETICAL LIST
OF THE
ABBREVIATIONS
USED IN THE
ZOOLOGICAL RECORD, Vol. XLI, 1904,
FOR THE
TITLES OF THE JOURNALS, TRANSACTIONS, ETC.
THAT CONTAIN ZOOLOGICAL PAPERS;
WITH INDICATIONS OF SOME OF THE PRINCIPAL
LIBRARIES
IN WHICH THE BOOKS ARE CURRENT.

THE primary object of this list is to enable those using the Record to find with ease the full title of a Journal they see quoted in an abbreviated form. The arrangement is therefore a simple alphabetical list of the abbreviations, uncomplicated by syllabic or verbal limitations.

The list has also to serve the Recorders and others as a list of Journals, and for this purpose it is important that it should be fairly complete as regards current periodicals. In order to increase the utility of the list, the abbreviations have been made on a uniform system; but a few exceptions have, in practice, been found necessary. The chief points that have been kept in view in constructing the abbreviations may be briefly stated as follows:—

The words selected as distinctive in each title are reduced in most cases to three or four.

A distinct abbreviation is used for each different word, and the same abbreviation for the same word is used throughout the list.

Accents are omitted. As a rule the first word of the title is represented by an abbreviation, but this rule is departed from in the case of articles and prepositions, and occasionally in the case of adjectives that are useless for distinctive purposes. Thus "Annual Report" becomes "Rep.," and "Occasional Papers" becomes "Pap." Such adjectives as "New" and "Royal" are omitted, except when necessary for distinctive or other purposes.

The consecutive order of the words of the title is maintained in the abbreviation, except in a few cases where the arrangement of the words in the title is very unusual or faulty.

As an example of the form of abbreviation that is aimed at, we take Bull. Soc. Moscou. The name of the locality is given at greater length than the more frequently used portions of the abbreviation.

After the titles, the place of publication is given, and this is followed by letters indicating some of the principal libraries in which the work may be consulted. The explanation of these letters is as follows:—

- N. = British Museum Natural History: general library.
 Nz. = " " library, zoological department
 Ng. = " " geological " "
 K. = Science library; Victoria and Albert Museum.
 R. = Royal Society library.
 Z. = Zoological Society library.
 L. = Linnean
 C. = Cambridge University library.
 C, p or (C) p = Cambridge Philosophical Society library.
 b, or g, or y, or z, after C, or (C) = Cambridge Balfour, or Sedgwick Museum, or Physiological, or Zoological libraries respectively.
 O. = Radcliffe library, Oxford.
 § is prefixed to titles added since the last list, and to changes of title when important.

Abeille—L'Abeille: Journal d'entomologie publié par la Société entomologique de France. (Paris, 8vo.) Nz. C.

Abh. Ak. Berlin—Abhandlungen der königlich Preussischen Akademie der Wissenschaften zu Berlin. (Berlin, 4to.) N. K. R. Z. 1 C, p. O.

Abh. Bayer. Ak.—Abhandlungen der mathematisch-physikalischen Classe der königlichen Bayerischen Akademie der Wissenschaften. (München, 4to.) N. K. R. Z. L. C, p. O.

Abh. Böhmisch. Ges.—Abhandlungen der mathematisch-naturwissenschaftlichen Classe der k. Böhmisches Gesellschaft. [Called also] *Rozprawy trdy matematicko-přirodovědecke královské České společnosti Nauk* (Prag, 4to.) N. K. R. L. C, p.

Abh. deutsch. Seefisch.-Ver.—Abhandlungen des deutschen Seefischerei-Vereins. (Berlin, 4to.) Nz. C.

Abh. geol. Karte Elsass—Abhandlungen zur geologischen Spezial-Karte von Elsass-Lothringen. (Strassburg, 8vo.) Ng.

Abh. geol. Landesanst. Darmstadt—Abhandlungen der grossherzoglich Hessischen geologischen Landesanstalt zu Darmstadt. (Darmstadt, 8vo.) Ng.

Abh. geol. Reichsanst.—Abhandlungen der Kaiserlich-Königlichen geologischen Reichsanstalt. (Vienna, 4to.) Ng. R. L. C.

Abh. Ges. Görlitz—Abhandlungen der naturforschenden Gesellschaft zu Görlitz. (Görlitz, 8vo.) N. K. R.

Abh. Ges. Götting.—Abhandlungen der königlichen Gesellschaft der Wissenschaften zu Göttingen. Mathematisch-Physikalische Klasse. Neue Folge. (Göttingen, 4to.) N. R. Z. L. C, p. O.

Abh. Ges. Halle—Abhandlungen der naturforschenden Gesellschaft zu Halle. (Halle, 4to.) N. K. R. Z. L. C. O.

Abh. Ges. Isis—Sitzungsberichte und Abhandlungen der naturwissenschaftlichen Gesellschaft 'Isis' in Dresden. (Dresden, 8vo.) N. K. Z. C.

Abh. Ges. Königsb.—[Part of *Schr. Ges. Königsb.*, q.v.]

- Abh. Ges. Nürnberg*—Abhandlungen der naturhistorischen Gesellschaft zu Nürnberg. (Nürnberg, 8vo.) N. K. C.
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- Abh. Hamburg. Anst.*—[Part of *Jahrb. Hamburg. Anst.*, q.v.]
- Abh. Mus. Dresden*—Abhandlungen und Berichte des königlichen zoologischen und anthropologisch-ethnographischen Museums zu Dresden. (Berlin, 4to.) Nz. Z. C.
- Abh. Preuss. geol. Landesanst.*—Abhandlungen der königlich Preussischen geologischen Landesanstalt (Neue Folge). [Formerly *Abh. geol. Spezialkarte von Preussen und den Thüringischen Staaten.*] (Berlin, 8vo.) Ng. K. C.
- Abh. Sachs. Ges.*—Abhandlungen der k. Sächsischen Gesellschaft der Wissenschaften. (Leipzig, 4to.) N. K. R. C, p.
- Abh. Schweiz. pal. Ges.*—Abhandlungen der Schweizerischen paläontologischen Gesellschaft. *Mémoires de la Société Paléontologique suisse.* (Basel, &c., 4to.) Ng. R. Z. (C) g. O.
- Abh. Senckenb. Ges.*—Abhandlungen herausgegeben von der Senckenbergischen naturforschenden Gesellschaft. (Frankfort a.-M., 4to.) N. K. R. Z. L. C. O.
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- Abh. Ver. Lotos*—Abhandlungen des deutschen naturwissenschaftlich-medicinischen Vereines für Böhmen "*Lotos.*" (Prag, 4to.) N. C.
- Acta Ac. German.*—N. *Acta Academiæ Cæsareæ Leopoldino-Carolinæ Germanicæ naturæ curiosorum.* [Called also] *Verhandlungen der k. Leop.-Carol. deutschen Akademie der Naturforscher.* (Halle, 4to.) N. K. R. Z. L. C, p. O.
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- Termes. Acad. Magyar Tar.*—Természetudományi Közlöny
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An asterisk prefixed to a quotation signifies that the Recorder has not seen the journal or work referred to.



THE ZOOLOGICAL RECORD

FOR 1905.

I. GENERAL SUBJECTS.*

BY

D. SHARP.

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INTRODUCTION.

THE number of titles this year is 786, being about 200 less than last year. This diminution is probably chiefly due to a more rigid exclusion of papers that are included in our special Records, and of those papers, the interest of which is chiefly faunistic.

RÄDL (587) gives us the first part of a history of biological nomenclature in modern times. He, however, really starts with Aristotle, and the work before us of the work extends only to Lamarck. It is an useful and well-executed work.

In text-books, we record the completion of GROBBEN's edition of the first volume of SEDGWICK's work (272) and the second volume of SEDGWICK's work (654). Both are highly spoken of.

The general work of Father Wasmann recorded last year [Zool. 1904, Gen. Sub. Title 919] has given rise to a polemic in which the scientific position is excellently stated by Prof. FOREL (229). Wasmann replies in (740).

GIGLIO-TOS (357) has published the third part of his work dealing with the most difficult subjects of biology. It is devoted to fecundation and heredity. He considers all the cytological processes in ontogeny as of "biomolecular addition."

CHAMPTON (147) suggests a theory of adaptation and selection. In Physiology we have the republication in book form of 38 memoirs of Prof. JACQUES LOEB (419).

The present state of the physiology of sex differentiation is discussed by R. HERTWIG (318) and SCHAUDINN (615), whose death is widely regretted, has given a concise sketch of sex-processes in *Ph* and a diagrammatic demonstration of the nuclear changes.

The works on heredity are again very numerous, and among others include a hypothesis as to its nature by HATSCHKE (200), the relation of chromosomes to heredity, HEIDER (301); and general surveys of the subject by STRASBURGER (686) and by ZIEGLER (782).

HILL (324) calls fresh attention to the extraordinary nature of the maturation phenomena in *Alcyonium*.

MISS STEVENS (680) informs us that in the parthenogenetic genus *Aphis* reduction in the number of chromosomes is dispensed with.

CONKLIN (143) finds that, in Ascidian eggs, isolated blastomeres give rise to a whole embryo but only to those parts of a larva that arise from them in normal conditions.

WIERZEJSKI's work (756) on the embryology of *Physa* appears to have considerable importance as a study of the earliest organogeny. His views as to the light cell-lineage throws on organ-formation is opposed to that of Conklin for Ascidians.

McCLUNG has a paper (463) on the accessory chromosome of *Orthocentrus* in which he discusses the relations of chromosomes to heredity and mutation; and WILSON's papers (759-761) on chromosomes of other insects are interesting and important.

CHILD (120) informs us, as the result of regeneration experiments, that regulation of form is a problem of development; and that with regard to heredity and morphogenesis physiological conceptions must be substituted for morphological.

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CORRIGENDA: in MAMMALIA, Zool. Rec. 1905.

- Page 6, No. 66; after Physiol., add norm. path.
- „ 12, „ 189; for 1905, ii, read 1905, i.
- „ 15, „ 237; „ „ „ „
- „ 17, „ 294; „ „ „ „
- „ 24, „ 432; „ t. c. read op. cit. xvi.
- „ 25, „ 439; „ Op. cit. ii read T. c.
- „ „ „ 440; „ Op. cit. read Ann. Nat. Hist.
- „ 33, line 17 from top; for *acrotis* read *macrota*.
- „ „ „ 13 „ bottom; for 1905, ii, read 1905, i.
- „ 34, „ 2 „ top; for t. c. read Ann. Nat. Hist. (7) xvi.
- „ „ „ 23 „ top; add comma after *tenuis*.
- „ „ „ „ dele i & ii in this and next line, and in line 25 read 1905, i, n. spp. & subspp.
- „ „ „ 5 from bottom; for 1905, ii, read 1905, i.
- „ 38, add *Mus coucha zuluensis*, Zululand, THOMAS & SCHWANN, P. Zool. Soc. London 1905, i, p. 268, n. subsp.
- „ „ line 10 from bottom; for 1905, ii, read 1905, i.
- „ 41, „ „ „ top; for ii, p. 172 read i, p. 272.
- „ 42, „ 11 „ top; „ 1905, ii, read 1905, i.
- „ „ add *Ourebia kenya*, Kenya district, MEINERTZHAGEN, P. Zool. Soc. London 1905, i, p. 169, n. sp.
- „ 45, line 20 from top; for n. sp. read n. subsp.

II. MAMMALIA.

BY

R. LYDEKKER.

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INTRODUCTION.

THE number of papers recorded falls only a little short of that of last year. Among noticeable work, reference may be made to MITCHELL's investigations on the mammalian cæcum, to those of ASSHETON and of ASSHETON & STEVENS on the placenta, and those of EGGELE on the lacteal sudoriferous glands of the Marsupials. In connection with the last reference may also be made to other work on Marsupials and Monotremes in "Semon's Reise." SCHLAGINHAUFEN's study of the papillary ridges and folds on the hands and feet of the *Primates* likewise claims a foremost place. BARDELEBEN's views on the compound structure of the mammalian lower jaw, if substantiated, revolutionize our conceptions of this part of skeleton.

In systematic work MEARNS's paper on Philippine Mammals and ANDERSEN's Chiropteran studies are noteworthy, as is THOMAS's description of a new genus of Old World Cricetine Mouse. Reference may also be made to ELLIOT's synopsis of American Mammals, to the completion of the supplementary edition of TROUESSART's "Catalogue," and to the issue of the second volume of British Mammals by MILLAIS. RIDGWAY's work on the Thoroughbred Horse is also one which has attracted much attention.

In palæontology SCOTT has added largely to our knowledge of the Patagonian Tertiary Mammal fauna; while the new Ruminants from Californian caves described by SINCLAIR and others are of the highest interest.

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2. —. Ueber *Halitherium bellunense*, eine Uebergangsform zur Gattung *Metazytherium*. T. c. pp. 393-398, fig. [*Sirenia*.]
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12. AMEGHINO, F. La perforacion astragaliana en los Mamíferos no es un carácter originamente primitivo. An. Mus. Buenos Aires xi, pp. 437-460, fig.
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19. —. Reemplazamiento de un nombre genérico. An. Soc. Argent. lix, p. 75. [*Rodentia*.]
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B. TEGUMENTARY SYSTEM.

Skin; JAPHA (202); RIJNBERG (341).
 Papillary ridges, etc.; SCHLAGINHAUFEN (373).
 Glands; MOLISSON (297).
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C. NERVOUS SYSTEM; SENSE ORGANS.

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 CAMPBELL (84); KRAUSE & KLEMPNER (221); LECHE (228); LONGO (23)
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 (197).
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F. ALIMENTARY SYSTEM.

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 (186); LAMBE (224); LÖNNBERG (238); RÜRIG & BÖRNER (348); STACH
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 Leucocytes; JOLLY & ACUNA (208).
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XII. MULTITUBERCULATA.

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INTRODUCTION.

Three important works have been finished in Germany during the year, viz. HENNICKE's new edition of Naumann's 'Vögel Mittel-Europas,' REICHENOW's famous 'Vögel Afrikas,' and REY's 'Eier der Vögel Mittel-Europas.' The amount of periodical literature devoted to Birds continues to increase, and to tax the patience of the Recorder, but in this portion of the work he has once more received the assistance of his friend and coadjutor, Mr Charles Chubb.

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Order CASUARIIFORMES.

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Dromiceius Vieill. vice *Dromaius*; OBERHOLSER, Smithsonian. Collect. quart. vol. 48, p. 60.

Order APTERYGIFORMES.

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Sub-class CARINATÆ.

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Order GALLIFORMES.

- Megapodius pritchardi*, figured; BULLER, Suppl. B. New Zealand i, pl. 2.
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- Chrysolophus pictus*, notes on the variations of plumage; FINN, *Avicult. Mag.* (2) iii, pp. 102-106: *C. amherstiae*, in Upper Burma; COMBES, *J. Bombay Soc.* xvi, pp. 512 & 753.
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Order HEMIPODII.

- Turnix lepurana*, breeding in confinement; BUTLER, *Avicult. Mag.* (2) iii, pp. 217-222: *T. suluensis*, n. sp., Jolo Is., off Sulu, Philippine Is.; MEARNS, *P. Soc. Washington* xviii, pp. 83 & 84: *T. nigricollis*, notes on the breeding in captivity; BUTLER, *Avicult. Mag.* (2) iii, pp. 195-203; *T. varia*, breeding in confinement; SETH-SMITH, *Bull. B. O. C.* xvi, p. 19: id. *Avicult. Mag.* (2) iii, pp. 295-301 cum tab.

Order PTEROCLIDIFORMES.

Catalogue of the collection in the Wiesbaden Museum; LAMPE (375).

- Pterocles exustus*, breeding in confinement; PYCRAFT, *Knowledge* 1906, p. 15: *P. decoratus ellenbecki*, n. subsp., S. Somali Land and Witu; ERLANGER, *J. Ornith.* 1905, pp. 92 & 93, Taf. iii, figg. 1a [♂], 1b [♀]; *P. decoratus*, figured; id. t. c. Taf. iii, figg. 2a [♂], 2b [♀]: *P. lichtensteini*, figured; id. t. c. Taf. iv, figg. 1a [♂], 1b [♀]: *P. lichtensteini hyperythrus*, n. subsp., S. Somaliland; id. t. c. p. 94, Taf. iv, figg. 2a [♂], 2b [♀].

Order COLUMBIFORMES.

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- T. senegalensis* and its allies; ERLANGER, t. c. pp. 116-119, Taf. v, figg. 1-3: *T. semitorquatus* and its allies; id. t. c. pp. 120-126, Taf. vi, figg. 1-3: *T. s. minor*, n. subsp., S. Somali Land; id. t. c. p. 125, Taf. vi, fig. 3: *T. s. intermedius*, n. subsp., S. Abyssinia, Galla Land, to Equat. and S. Africa; id. t. c. p. 124, Taf. vi, fig. 2: *T. decipiens griseiventris*, n. subsp., N. Somali Land; id. t. c. p. 126, Taf. vi, fig. 6: *T. decipiens* (fig. 5), *T. d. ambiguus* (fig. 7), *T. d. perspicillatus* (fig. 8), figured; id. t. c. Taf. vi: *T. damarensis*, figured; id. t. c. p. 123, Taf. vi, fig. 9: *T. d. tropicus* (fig. 10), *T. d. capicola* (fig. 11), figured; id. t. c. Taf. vi: *T. d. somalicus*, n. subsp.; id. t. c. p. 127, Taf. vi, fig. 12: *T. risorius*, figured; id. t. c. Taf. vi, fig. 13: *T. r. decaocto* (fig. 14), *T. r. roseogriseus* (fig. 15), figured; id. t. c. Taf. vi: *T. vinaceus* (fig. 16), *T. reichenowi* (fig. 17), figured; id. Taf. vi: ERLANGER, J. Ornith. 1905, p. 126, Taf. vi, fig. 2b: *T. ambiguus permixtus*, n. subsp., E. Africa, from the Victoria Nyanza to the Zambesi; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 868: *T. reichenowi* Erl., N. E. Africa (Dolo to Gobwen), figured; ERLANGER, J. Ornith. 1905, Taf. vi, fig. 6.
- Scardafellu inca dialeucos*, n. subsp., Honduras and Nicaragua; BANGS, P. Soc. Washington xviii, pp. 151 & 152.
- Claravis pretiosa livida*, n. subsp., Rio Cauca, Colombia; id. t. c. p. 153.
- Ena capensis anonyma*, n. subsp., Kilimanjaro district, E. Africa; OBERHOLSER, P. U. S. Mus. xxviii, pp. 843 & 844.
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- Chalcopelia chalcospilos somatica*, n. subsp., S. Somali Land; ERLANGER, J. Ornith. 1905, p. 134, Taf. vii, fig. 2b: *C. afra* (fig. 1) and *C. chalcospilos chalcospilos* (fig. 2a), figured; id. t. c. Taf. vii.
- Chalcophaps natalis*, egg; MUNT, Bull. B. O. C. xv, p. 51.
- Petrophassa albipennis*, eggs described; NORTH, Rec. Austral. Mus. v, p. 269.
- Lophophaps plumifera* and *L. ferruginea*, notes on nomenclature; HARTERT, Nov. Zool. xii, pp. 197 & 198.
- Ocyphaps lophotes*, in captivity; ROBERTS, Emu iv, pp. 182-184.
- Aplopelia larvata* from Kilimanjaro; OBERHOLSER, P. U. S. Mus. xxviii, p. 847.
- Columbigallina passerina exigua*, n. subsp., Mona Island, Porto Rica; RILEY, P. U. S. Mus. xxix, pp. 171 & 172: *C. passerina granatina* and *C. rufipennis*, nests and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 280.
- Leptoptila jamaicensis*, figured; SETH-SMITH, Avicult. Mag. (2) iii, pl. to p. 87: *L. verreauxi*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, pp. 279 & 290: *L. chloronuchenia*, nesting in confinement; ALDERSON, Avicult. Mag. (2) iii, pp. 130-134.
- Geotrygon martinica digressa*, n. subsp., Guadeloupe, Lesser Antilles; BANGS, P. Soc. Washington xviii, pp. 153 & 154.
- Phlogoenas beccarii intermedia*, n. subsp., Solomon Islands; ROTHSCILD & HARTERT, Nov. Zool. xii, pp. 246 & 247: *P. platenae*, nest and eggs described; MCGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 8, pls. iv-vi.
- Leucosarcia praevisa*, n. sp. [Fossil], Pleistocene of Interior of South Australia; DE VIS, Ann. Queensland Mus. No. 6, p. 8, pl. i, fig. 5a.
- Microgoura meeki*, described; ROTHSCILD & HARTERT, Nov. Zool. xii, p. 247.
- Didunculus strigirostris*, egg; MUNT, Bull. B. O. C. xv, p. 51.

Order RALLIFORMES.

- Rallus aquaticus korejewi*, n. subsp., N. E. Turkestan, Amu Darya, Transcaspia, E. Persia; SARUDNY, Ornith. Monber. xiii, pp. 209 & 210 from Lenkoran; LOUDON, t. c. p. 209, note: *R. aquaticus* also in Lenkoran; LOUDON, t. c. p. 209, note: *R. elegans*, in Massachusetts; FARLEY, Auk xxii, p. 409.
- Hypotaenidia torquata*, abnormal bill; MCGREGOR, Bureau Govt. Lab., Manila, No. 34, p. 9, pl. vii.
- Cabalus modestus*, figured; BULLER, Suppl. B. New Zealand i, pl. iii.
- Ocydromus scotti*, n. sp., Stewart Island, OGILVIE-GRANT, Bull. B. O. C. xv, p. 78 (1905): id. Ibis 1905, pp. 550 & 551.
- Orex pratensis*, near Lurgan in winter (Jan.); PATTERSON, Irish Naturalist, xiv, p. 119.
- Porzana maruetta* var. *maculipennis*, n. subsp., Murghab and Herirud districts, E. Persia; SARUDNY, Denkschr. K. Russ. Geogr. Ges. xxxvi, p. 74 (1903). Cf. OTTO, Ornith. Monber. xiii, p. 135: *P. noveboracensis*, near Springfield, Mass.; MORRIS, Auk xxii, p. 208.
- Sarothrura bonapartei* from Sierra Leone; KEMP, Ibis 1905, p. 217.
- Circus pileatus* (Wied.) = *C. viridis* (P. L. S. Müll.); HELLMAYR, Nov. Zool. xii, p. 304: *C. viridis subrufescens* Berlepsch & Stolzmann = *C. v. facialis* Tschudi; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 19.
- Porphyrio comeri* from Gough Island; CLARKE, Ibis 1905, pp. 258 & 259.
- Gallinula angulata*, breeding in South Somali Land; ERLANGER, J. Ornith. 1905, p. 90.
- Porphyrio porphyrio* and its allies, notes on; id. t. c. pp. 88 & 89.
- P. caeruleus*, in Germany; KLEINSCHMIDT, Falco i, p. 42, footnote.
- Ionornis martinica*, in Massachusetts; HOWE, Auk xxii, p. 319; FARLEY, t. c. p. 409.

Order PODICIPEDIFORMES.

See PEOLA (501).

- Podiceps cristatus*, nesting in Perthshire; WHYTE, Tr. Perthsh. Soc. iv, pp. 83-86.
- Colymbus holballi*, at Englewood, N. J. in June; HIX, Auk xxii, p. 407.

Order SPHENISCIFORMES.

- Albino penguins; CLARKE, Bull. B. O. C. xv, p. 57; ROTHSCCHILD, t. c. p. 57; WILSON, t. c. p. 57; GRANT, t. c. p. 57.
- Anthropornis*, n. g. (fossil), Type *A. nordenskjoeldii*, n. sp., Seymour Island; WIMAN, Bull. Geol. Inst. Upsala vi, p. 249, pl. xii, fig. 6.
- Aptenodytes forsteri*, note on; PYCRAFT, Knowledge 1905, p. 65.
- Catarrhactes chrysocome* and its supposed scratching of the rocks with its feet; VALLENTIN, Bull. B. O. C. xv, pp. 48-50.
- Eudyptula minor*, observations on the young; MCCLYMONT, Zoologist 1905, pp. 329-331.
- Pachypteryx*, n. g. (fossil), type *P. grandis*, n. sp., Seymour Island; WIMAN, Bull. Geol. Inst. Upsala vi, p. 250, pl. xii, fig. 3.
- Eospheniscus*, n. g. (fossil), type *E. gunnari*, n. sp., Seymour Island; id. t. c. p. 250, pl. xii, fig. 5.
- Delphiornis*, n. g. (fossil), type *D. larsenii*, n. sp., Seymour Island; id. t. c. pp. 250 & 251, pl. xii, fig. 1.
- Ichthyopteryx*, n. g. (fossil), type *I. gracilis*, n. sp., Seymour Island; id. t. c. pp. 251 & 252, pl. xii, fig. 4.

Order PROCELLARIIFORMES.

- Procellaria pelagica*, breeding on the Bass Rock; CLARKE, Ann. Scott. Nat. Hist. 1905, pp. 55 & 56: on the Flannan Islands; id. t. c. pp. 85 & 86.
- Oceanodroma leucorhoa* nesting on the Flannan Islands; CLARKE, Ann. Scott. Nat. Hist. 1905, pp. 85 & 86: on Long Island; MURPHY, Auk xxii, pp. 205 & 206: *O. socorroensis*, notes on; KAEDING, Condor vii, pp. 108 & 109.
- Puffinus anglorum*, at Bromsgrove, Worcestershire; GROUND, Zoologist 1905, pp. 394 & 395: at Great Yarmouth; PATTERSON, t. c. p. 395: notes on; MACKENZIE, Ann. Scott. Nat. Hist. 1905, pp. 141-143: *P. flavirostris* and *P. kuhli*, notes on; HARTERT, Nov. Zool. xii, p. 97: *P. assimilis* in Kent; TICEHURST, Bull. B. O. C. xvi, pp. 38 & 39.
- Estreleta cervicalis*, figured; BULLER, Suppl. B. New Zealand i, pl. iv.
- Pagodroma nivea*, var. *novegeorgica*? described; REICHENOW, J. f. O. 1905, p. 515.
- Bulweria bulweri*, notes on; SCHMITZ, Ornith. Jahrb. xvi, pp. 66-70.
- Fulmarus glacialis*, notes on the species at St Kilda; MACKENZIE, Ann. Scott. Nat. Hist. 1905, pp. 78-80.
- Daption capensis*, egg of; CLARKE, Bull. B. O. C. xv, p. 57.
- Prion dispar*, n. sp., Heard Island; REICHENOW, J. Ornith. 1905, p. 505.
- Diomedea* and *Thalassogeron*, remarks on the species; PARKIN, 12th Ann. Rep. Hastings Soc. pp. 1-4: *D. exulans* and *D. fuliginosa*, anatomy of; ULRICH, deutsch Tiefsee-Expedition, pp. 321-342, pls. xix-xxii: *D. bulleri* and *D. salvini*, heads figured; BULLER, Suppl. B. New Zealand i, pl. v.
- Thalassogeron* = *Diomedea*; ROTHSCILD, Bull. B. O. C. xv, p. 45. *T. carteri* or an allied form from Gough Island; id. t. c. p. 45: CLARKE, t. c. pp. 44 & 45: *T. layardi* Salvin = *Diomedea cauta* Gould; GRANT, Ibis 1905, pp. 558 & 559: *T. eximius* on Gough Island; CLARKE, Ibis 1905, p. 256: *Thalassogeron*, sp. incog.; id. t. c. p. 265.
- Phaebetria cornicoides* Hutton distinct from *P. fuliginosa*; GRANT, Ibis 1905, p. 560: notes on; CLARKE, t. c. p. 265.
- Macronectes*, n. nov. pro *Ossifraga* H. & J. nec Wood, 1835; RICHMOND, P. Soc. Washington xviii, p. 76.
- Dyspetornis*, n. nov. for *Hydroornis* Milne-Edw. nec. Blyth; OBERHOLSER, Smithson. Collect. quart. xlviii, p. 60.

Order ALCIFORMES.

- Plautus impennis*, note on a specimen and three eggs in the Thayer Museum; THAYER, Auk xxii, pp. 300-302, pls. xiii & xiv.
- Alca torda* in Saxony; MUSHACKE, Ornith. Monber. xiii, p. 112.
- Uria troile californica*, nesting habits; FINLAY, Condor vii, pp. 165-169.
- Gavia lunne*, in South-eastern Michigan; SWALES & TAVERNER, Auk xxii, p. 88.
- Mergulus alle*, notes on the species in Spitzbergen; INGRAM, Avicult. Mag. (2) iii, pp. 356-358.
- Alle alle*, on the coast of North Carolina; THAYER, Auk xxii, p. 310.

Order LARIFORMES.

- Inca*, Jard. vice *Nania* Boie; OBERHOLSER, Smithson. Collect. quart. xlviii, p. 61.
- Sterna macrura*, in Herefordshire; LLOYD, Tr. Woolhope Club 1904, p. 147: *S. cantiaea*, note on the breeding in Cumberland; ELLISON, Mem. Manchester Soc. xlix, pp. xiv & xv cum tab.: *S. auriatilis* and

- S. minuta*, notes on; PATTERSON, Zoologist 1905, pp. 258-262: *caspia*, in South Carolina; WAYNE, Auk xxii, p. 395: on the coast of Western Germany; BARTELS, Ornith. Monber. xiii, pp. 73 & 74: *fuliginosa*, on the banks of the Lower Loire; BUREAU, Bull. Soc. Ouest France iv, pp. 225-256, pls. ix & x.
- Xema sabinei*, in Montana; CAMERON, Auk xxii, p. 76.
- Larus marinus* and *L. fuscus*, notes on the species at the Bass Rock; EVANS, P. Phys. Soc. Edinb. xvi, pp. 42-51: *L. minutus*, notes on; CHRISTENSEN, Vid. Medd. 1905, pp. 245-250, pl. vi: *L. kumlieni*, in Massachusetts; ALLEN, Auk xxii, p. 205: *L. ridibundus*, anatomy of; REX, Morphol. Jahrb. 1905, pp. 109-347, pls. iii-ix, text-figg. 1-60.
- Leucophaeus scoresbii*, note on; SCLATER, Knowledge 1905, p. 130.
- Rissa tridactyla* feeding on a Blackbird; TEGETMEIER, Bull. B. O. C. xv, pp. 88 & 89.
- Lestris pomatorhinus*, in Italy; SALVADORI, Avicula ix, p. 151.
- Stercorarius pomatorhinus*, in Herefordshire; LLOYD, Tr. Woolhope Club 1904, p. 148: *S. crepidatus*, in Hungary; CSATO, Ornith. Jahrb. xvi, pp. 70 & 71.
- Megalestris antarctica falklandica*, n. subsp., Falkland Is.; LÖNNBERG, Wiss. Erg. Schwed. S. P. Exped. v, Lief. 5, p. 8 (1905).

Order CHARADRIIFORMES.

See PEOLA (501).

- Hematopus palliatus*, note on; REED, Revist. Chilena ix, pp. 49 & 50, fig. 2.
- Vanellus vanellus*, necrosis of the foot; NICHOLS, Irish Natural. xiv, pp. 32 & 33: *V. vulguri*, nesting habits; KELSO, Zoologist 1905, pp. 108 & 109.
- Eudromias morinellus*, at Fowlness Island; LAVER & CORNISH, Essex Natural. xiv, p. 71.
- Oxyechus vocifera*, in the Hawaiian Islands (Maui); BRYAN, Pap. B. P. Bishop Mus. ii, p. 56.
- Aegialitis vocifera*, note on; KOPMAN, Auk xxii, pp. 209 & 210.
- Recurvirostra americana*, in New Jersey; BRAISLIN, Auk xxii, p. 78.
- Limosa limosa*, note on; LÖNNBERG, Archiv Zool. ii, No. 9, p. 14.
- Catoptrophorus* Bonap. (Ann. Lyc. New York ii, p. 323), is the proper name for the Willet: *Symphemia* Rafinesq. is synonymous with *Ereunetes*; RICHMOND, P. Soc. Washington xviii, p. 75.
- Totanus totanus eurhinus*, note on; LÖNNBERG, Arkiv Zool. ii, pp. 12 & 13: *T. solitarius* nesting (in a tree in old nests of other birds) in N. W. Canada; JOURDAIN, Ibis 1905, pp. 158-161.
- Helodromus ochropus*, note on; LÖNNBERG, Arkiv Zool. ii, p. 13.
- Pavoncella pugnax*, at Camden, Maine; THAYER, Auk xxii, p. 409: in Indiana; YOUNG, t. c. p. 410: North American records; DEANE, t. c. p. 411.
- Bartramia longicauda* in Cornwall; BONHOTE, Bull. B. O. C. xv, p. 32.
- Limonites minutus*, from Mindanao, Philippine Is.; MEARNs, P. Soc. Washington xviii, p. 89.
- Actodromas* vice *Limonites* Kaup (nec Dalman, *Lepid.*); OBERHOLSER, P. U. S. Mus. xxviii, p. 839.
- Tringa canutus*, discovery of the nest and eggs; OTTOSON, Ornith. Jahrb. xvi, p. 72: nesting in Iceland; id. Ibis 1905, pp. 105 & 106: eggs from the Taimyr Peninsula and New Siberian Islands; BIANCHI, Bull. B. O. C. xv, p. 92: *T. solitaria* Wils. is not a *Helodromus* but a *Rhyacophilus*; OBERHOLSER, P. U. S. Mus. xxviii, p. 838: *T. subarquata*, on the Dee Marshes in February; CUMMINGS, Zoologist 1905, pp. 145 & 146.

- Gallinago australis*, obtained at Lord Howe Island; NORTH, Rec. Austral. Mus. v, p. 338: *G. major*, in Shropshire; POTTER, Field, Sept. 9, 1905; PYCRAFT, Knowledge 1905, p. 255: in Shetland; id. t. c. p. 64: *G. sabinei*, in Cambridgeshire; id. t. c. p. 15.
- Scolopax sabinei* in Cambridgeshire; PYCRAFT, Ibis 1905, pp. 289-291.
- Rostratula bengalensis* nesting in S. Somali Land; ERLANGER, J. Ornith. 1905, pp. 78 & 79.
- Phalaropus hyperboreus*, in Shropshire; FORREST, Rec. Caradoc Club xiv, p. 36: *P. fulicarius* in Dalmatia; RÖSSLER, Ornith. Monber. xiii, p. 74.
- Hydroleuctor gallinaceus*, from Southern Mindanao, Philippine Is.; MEARNs, P. Soc. Washington xviii, p. 89.
- Ortyxelos meiffreni*, habits; A. L. BUTLER, Ibis 1905, pp. 386 & 387.
- Pluvianus aegyptius*, breeding habits; PYCRAFT, Knowledge 1905, p. 229: its eggs; BUTLER, Ibis 1905, pp. 399 & 400.
- Cursorius gallicus* and allies; ERLANGER, J. Ornith. 1905, pp. 57 & 58, Taf. 1, *C. gallicus littoralis*, n. subsp., S. Somali Land; id. t. c. p. 58, Taf. 1, fig. 3: *C. somalensis littoralis*, n. subsp., S. Somali Land; ERLANGER, J. Ornith. 1905, p. 58, Taf. 1, fig. 3; REICHENOW, Vög. Afrikas iii, Nachtrag iii, p. 801.
- Rhinoptilus*, synopsis of the species, *R. africanus sharpei*, n. subsp.; id. t. c. pp. 60 & 61: in Italy; GRIFFOLI, Avicula ix, p. 159: *R. bisignatus harteingi* from Somali Land is distinct from typical *R. bisignatus*; OBERHOLSER, P. U. S. Mus. xxviii, p. 839.
- Glareola fusca limbata* is the form of Pratincole in N. E. Africa and W. Africa; REICHENOW, Vög. Afrikas iii, p. 800.
- Oedicnemus*, notes on the African species; ERLANGER, J. Ornith. 1905, pp. 68-74: *O. oedicnemus*, near Lahej, S. Arabia; id. t. c. p. 70: *O. gularis*, distinct from *O. vermiculatus*; id. t. c. pp. 71 & 72: *O. capensis dodsoni*, notes on; id. t. c. pp. 73 & 74: *O. capensis* var. n. *psammochrous*, Togo Land: var. n. *damurensis*, Damara Land; REICHENOW, Vög. Afrikas iii, Nachtr. p. 801.
- Ocyplanus*, n. gen. [fossil] type *O. praeses*, n. sp., Pleistocene of Interior of South Australia; DE VIs, Ann. Queensland Mus. No. 6, pp. 8 & 9, pl. i, fig. 5 b.
- Otis tarda korejevi*, n. subsp., Turkestan; SARUDNY, Ornith. Monber. xiii, pp. 163 & 164: *O. tetrax*, near Eisleben; KLEINSCHMIDT, Ornith. Monber. xiii, p. 64: *O. canicollis canicollis* figured, Taf. ii, fig. 1: *O. c. somaliensis*, n. subsp., N. Somali Land; ERLANGER, J. Ornith. 1905, p. 82, Taf. ii, fig. 2 = *O. canicollis*; REICHENOW, Vög. Afrikas iii, Nachtr. i, p. 802: *O. c. erlangeri*, n. sp., S. Somali Land to Iringa, E. Africa; id. t. c.: *O. macqueeni*, note on; HEATH, J. Bombay Soc. xvi, pp. 372 & 373.
- Sypheotis bengalensis*, its winter plumage; WALL, J. Bombay Soc. xvi, pp. 388 & 389.
- Eupodotis arabs* in the forest of Marmora, Marocco; MEADE-WALDO, Ibis 1905, pp. 161-164: notes on; BUTLER, Ibis 1905, pp. 392 & 393.
- Lissotis notophila*, n. sp., Natal; OBERHOLSER, P. U. S. Mus. xxviii, p. 836: *L. lovati* Grant, is the true *L. melanogaster* (Rüpp.); id. t. c. p. 836.

Order GRUIFORMES.

- Grus nesiotas*, n. sp., Isle of Pines; BANGS & ZAPPEY, Amer. Natural. xxxix, pp. 193 & 194.
- Antigone sharpei*, from Luzon; MCGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 29.
- Rhinocetus jubatus*, notes on; CAMPBELL, Emu iv, pp. 166-168, pl. xii.

Order ARDEIFORMES.

- Ibis* (?) *conditus*, **n. sp.** [fossil]. Pleistocene of Interior of South Australia; DE VIS, Ann. Queensland Mus. No. 6, pp. 10 & 11, pl. ii, fig. 2 a, b.
- Theristicus olivaceus* and its allies, *T. cupreipennis*, *T. splendidus*, *T. rufus*; notes on; REICHENOW, Vög. Africas iii, Nachtrag, pp. 803-805, cum figg.
- Comatibis eremita*, eggs described; ROTHSCHILD, Bull. B. O. C. xvi, pp. 14 & 16.
- Plegadis falcinellus*, notes on; SCLATER, Knowledge 1905, pp. 48 & 49: in Herefordshire; LLOYD, Tr. Woolhope Club 1904, p. 148: from Mindanao; MEARNs, P. Soc. Washington xviii, p. 89.
- Ciconia alba*, distribution in the Rhine Provinces during the breeding season; SCHUSTER, Jahrb. Nassau. Ver. 58, pp. 191-194: at North Wotton; PYCRAFT, Knowledge 1905, p. 255: nesting in Bavaria; GENGLER, Verh. Orn. Ges. Bayern v, pp. 45-64.
- Dissoura*, 4 species recognised, *D. neglecta*, **n. sp.**, Java, Sumbawa, Lombok, Celebes, Philippines; FINSCH, Ornith. Monber. 1904, p. 94: id. Notes Leyden Mus. xxvi, pp. 150-154 (1905).
- Xenorhynchopsis*, **n. gen.** [fossil]. Type, *X. tibialis* and *X. minor*, **n. spp.** Pleistocene of Interior of South Australia; DE VIS, Ann. Queensland Mus. No. 6, pp. 9 & 10, pl. i, figg. 6 a, b, c, pl. ii, figg. a, b.
- Xenorhynchus nanus*, **n. sp.** [fossil]. Pleistocene of Interior of South Australia; id. t. c. p. 9.
- Mycteria senegalensis*, notes on habits; BUTLER, Ibis 1905, pp. 379-381, cum fig. (Juv.).
- Balaniceps rex*, notes on habits; id. t. c. pp. 373-377.
- Ardea repens*, **n. sp.**, Isle of Pines; BANGS & ZAPPEY, Amer. Natural. xxxix, p. 186.
- Herodias timoriensis* from Mindanao, Philippine Islands; MEARNs, P. Soc. Washington xviii, pp. 89 & 90.
- Florida cerulea* in Connecticut; MCCOOK, Auk xxii, pp. 76 & 77: in Massachusetts; ALLEN, t. c. p. 77: HORN, t. c. p. 319.
- Nycticorax manillensis*, note on; MCGREGOR, Bureau Govt. Labs. Manila, No. 34, pp. 10 & 11: *N. griseus* at Pevensey, Sussex; NICOLL, Zoologist 1905, p. 267.
- Butorides jaranica*, note on; MCGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 11, pl. viii.
- Ardetta neozena* from Michigan; TAVERNER, Auk xxii, pp. 77 & 78.
- Zebritus pumilus*, notes on plumage of sexes; HELLMAYR, Ornith. xiii, pp. 56-58.
- Nannocnus ijimai*, **n. sp.**, Islands between Kiushu and Formosa; OGAWA, Annot. zool. Japon. v, pp. 215 & 216, pl. xi.
- Botaurus stellaris* in Ireland; JOHNSTON, Irish Natural. xiv, p. 119: *B. stellaris* from Luzon; MCGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 29.

Order PHENICOPTERIFORMES.

- Phenicopterus ruber*, notes on the life history; CHAPMAN, Bull. Amer. Mus. xxi, pp. 53-77, text-figg. 1-16: former status in the Lesser Antilles; CLARK, Auk xxii, pp. 318 & 319: breeding habits; CHAPMAN, Century Magazine, December 1904: PYCRAFT, Knowledge 1905, p. 15.

Order PALAMEDEIFORMES.

- Chauna cristata*, breeding in the Zoological Gardens, SCLATER, Ibis 1905, p. 143.

Order ANSERIFORMES.

MILLAR, J. G., on hybrid ducks. Bull. B. O. C. xv, p. 89: BONHOTE, t. c. pp. 88 & 89.

Archaeocynus, n. gen. [fossil]. Type *A. lacustris*, n. sp. Pleistocene of Interior of South Australia; DE VIS, Ann. Queensland Mus. No. 6, pp. 11-13, pl. iii, figg. 2 a, b, 3, 4, 6 a, b, 7 a, b.

Sarcidiornis melanonota, figured; BAKER, J. Bombay Soc. xvi, pl. xxii.

Chenopsis nanus, n. sp. [fossil]. Pleistocene of Interior of South Australia; DE VIS, Ann. Queensland Mus. No. 6, pp. 13 & 14, pl. ii, figg. 3, 5-7.

Bernicla leucopsis, near Warkworth; PYBUS, Tr. Soc. Northumb. (2) i, p. 301.

Branta bernicla leucogastra, note on the nest and eggs; THAYER, Auk xxii, p. 408.

Chen rossi breeding in confinement; BLAAUW, Ibis 1905, pp. 137 & 138.

Nettapus egrensis, n. sp. [fossil]. Pleistocene of Interior of South Australia; DE VIS, Ann. Queensland Mus. No. 6, p. 16, pl. iv, fig. 9.

Casarca casarca in Dalmatia; LÖSSLER, Ornith. Monber. xiii, p. 74.

Tadorna radjah rufitergum, n. subsp., Arnhem Land, N. Australia; HARTERT, Nov. Zool. xii, p. 205.

Anas (Nettium) strenua, n. sp. [fossil]. Pleistocene of Interior of South Australia; DE VIS, Ann. Queensland Mus. No. 6, p. 15, pl. iv, fig. 6:

A. gracilipes, n. sp. [fossil]. Pleistocene of Interior of South Australia; DE VIS, t. c. pp. 14 & 15, pl. iv.

Anas boscas, nesting in a tree; SMITH, Irish Natural. xiv, p. 200: nesting in a tree (60 feet from the ground); FISHER, Wilts. Mag. xxxiv, p. 109: *A. boscas spilogaster*, notes on; SCHIÖLER, Vid. Medd. 1905, pp. 127-148, 239 & 240, pls. ii-iv: *A. superciliosa peleuensis* is the form inhabiting the Pelew Islands, Samoa, Fiji, and the Solomon Islands, in place of the true *A. superciliosa* from Australia and New Zealand; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 248: *A. boscas* × *A. pacilorhyncha*; BONHOTE, P. Zool. Soc. London 1905, Vol. i, pp. 147-149: *A. superciliosa* × *Dafila acuta*; id. t. c. pp. 147-149.

Chaulelasmus streperus, near Springfield, Mass.; MORRIS, Auk xxii, p. 207.

Mareca penelope at Sandusky, Ohio; DEANE, t. c. p. 206.

Spatula clypeata, a brood of albinos; id. t. c. pp. 408 & 409: figured; BAKER, J. Bombay Soc. xvi, pl. xxi: *S. clypeata* × *Querquedula discors*; DEANE, Auk xxii, p. 321.

Netta rufina in Holland; OORT, Notes Leyden Mus. xxvi, pp. 196-199.

Fuligula cristata breeding on Lough Conn; WARREN, Irish Natural. xiv, p. 165.

Aythya vallisneria in Colorado; FELGER, Auk xxii, p. 421.

Nyroca effodiata, n. sp. [fossil]. Pleistocene of Interior of South Australia; DE VIS, Ann. Queensland Mus. No. 6, pp. 15 & 16, pl. iv.

Nyroca nyroca from Tianshan; LÖNNBERG, Arkiv Zool. ii, No. 9, p. 3: *N. africana*, figured; BAKER, J. Bombay Soc. xvi, pl. xx.

Edemia nigra breeding in Ireland; TREVELYAN, Field, July 15, 1905: PYCRAFT, Knowledge 1905, p. 207: *Æ. deglandi* and *Æ. perspicillata*, in South-Eastern Michigan; SWALES & TAVERNER, Auk xxii, p. 88.

Somateria mollissima and its allies; ROTHSCHILD, Bull. B. O. C. xv, pp. 43 and 44: blackish V-shaped markings on the throat; SAUNDERS, t. c. pp. 69 & 70: in the Adriatic; ANGELIN, Boll. Soc. Ital. (2) vi, pp. 101-103.

S. v.-nigrum in the Orkney Islands; STUBBS, Bull. B. O. C. xv, pp. 32 & 33; CLARKE, Zoologist, p. 74: STUBBS, t. c. pp. 142 & 143: ROBINSON, t. c. p. 143: OLDHAM, t. c. p. 185.

- Biziura lobata*, osteology ; PYCRAFT, Bull. B. O. C. xv, p. 100: *B. exhumata* n. sp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, Ann. Queensland Mus. No. 6, p. 14, pl. iv, figg. 1-3.
Mergus albellus, notes on ; BONHOTE, Avicult. Mag. (2) iii, pp. 120-124.
Merganser castor, note on ; PRIMROSE, J. Bombay Soc. xvi, pp. 378 & 379.
M. australis, figured ; BULLER, Suppl. B. New Zealand ii, pl. vi.

Order PELECANIFORMES.

- Phalacrocorax*, notes on the New Zealand Cormorants and allied forms. Key to the species ; GRANT, Ibis 1905, pp. 566-576: *P. brandti*, notes on the nesting ; FINLAY, Condor vii, pp. 161-165: *P. gregorii* and *P. vetustus*, n. spp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, Ann. Queensland Mus. No. 6, pp. 18-25, pl. v-ix.
Plotus laticeps, n. sp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, t. c. pp. 17 & 18, pl. vi.
Sula bassana in Italy ; FOA, Avicula ix, pp. 5-8: SALVADORI, t. c. pp. 33 & 34.
Pelecanus sula Gm. = *Sula piscator* vice *Sula sula* auct. (= *Sula leucogastra*, Bodd.) ; NELSON, P. Soc. Washington xviii, pp. 121 & 122.
Sula etesiaca, n. sp., Gorgona Island, Colombia ; THAYER & BANGS, Bull. Mus. Harvard xvi, pp. 92 & 93.
Fregata aquila at San Pablo Bay, California ; GIFFORD, Auk xxii, p. 408.
Phaethon americana at Phoenix, Arizona ; BRENINGER, t. c. p. 408.
Pelecanus grandiceps and *P. proavus*, n. spp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, Ann. Queensland Mus. No. 6, pp. 16-18, pl. v, figg. 1-5: *P. sharpei* from the Lower Congo ; DUBOIS, Ann. Mus. Congo i, p. 21: *P. fuscus*, arterial system of the brain ; BEDDARD, P. Zool. Soc. London 1905, i, p. 109, text-fig. 17.

Order CATHARTIFORMES.

- Sarcorhamphus patruus*, n. sp. [fossil], Tarija, Bolivia ; LÖNNBERG, Bull. Geol. Inst. Upsala vi, pp. 1-11, text-figg. 2 & 4.
Cathartes aura, in Maine ; DEANE, Auk xxii, pp. 78 & 79: in Michigan ; SWALES, t. c. p. 413: in Western Massachusetts ; MORRIS, t. c. p. 413: *C. a. septentrionalis* (Wied.) is the North American species, true *C. aura* (Linn.), with which *C. burrovianus* Cassin is identical, being the southern form ; NELSON, P. Soc. Washington xviii, pp. 123-125.
Catharista urubu brasiliensis (Bp.) is distinct from the northern form, from the United States ; ALLEN, Bull. Amer. Mus. xxi, pp. 275 & 276.

Order ACCIPITRIFORMES.

- Classification of the Accipitres ; SUSHKIN (674).
 Eggs of the birds of Europe ; DRESSER (179).
Circus cineraceus, at Rainworth, Notts ; WHITAKER, Zoologist 1905, p. 266.
Parabuteo unicinctus, from Margarita Island ; CLARK, Auk xxii, p. 79.
Micrastrur melanoleucus, in Sinaloa, note on ; MILLER, Bull. Amer. Mus. xxi, p. 345.
Melierax niger, a melanistic form of *M. gabor* ; A. L. BUTLER, Ibis 1905, p. 369.
Astur palumbarius, notes on ; PILLEY, Tr. Woolhope Club 1904, pp. 361 & 362: *A. fasciatus* Vig. & Horsf. vice *A. approximans* Vig. & Horsf. ;

- HARTERT, Nov. Zool. xii, p. 207: *A. sphenurus* from Sierra Leone; KEMP, Ibis 1905, p. 220.
- A. storques rubiana*, n. subsp., Solomon Islands (Rubiana, Rendova, Gizo); ROTHSCILD & HARTERT, Nov. Zool. xii, p. 250: *A. e. bougainvillei*, n. subsp., N. Solomon Islands, Shortland group, Bougainville Island; iid. t. c. p. 251: *A. holomelas* Sharpe, *A. woodfordi* Sharpe, *A. versicolor* Ramsay = *A. albigularis* (Gray); ROTHSCILD & HARTERT, Nov. Zool. xii, p. 249: *A. sparsumfasciatus acoetus*, n. subsp., Taveta, Brit. E. Africa; OBERHOLSER, P. U. S. Mus. xxviii, p. 839.
- Accipiter velox rufilatus* Ridgw. = *Nisus pacificus* Less., *Accipiter velox pacificus* (Less.) the correct name; NELSON, P. Soc. Washington xviii, p. 122: *A. buettikoferi* from Sierra Leone; KEMP, Ibis 1905, p. 220.
- Buteo vulgaris*, curious nesting habit; VAN KEMPEN, Bull. Soc. zool. France xxx, p. 151.
- B. simmermanni*, in Holland; SNOUCKAERT, Ornith. Monber. xiii, p. 58: *B. borealis calurus*, nesting habits; FINLAY, Condor vii, pp. 1-7 cum figg.: *B. buteo insularum* Floerike, in the Azores; HARTERT, Nov. Zool. xii, pp. 111 & 112.
- Buponia magnirostris*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 280.
- Urubitinga subtilis*, n. sp., Gorgona Is., Colombia; THAYER & BANGS, Bull. Mus. Harvard xvi, p. 94: *U. ridgwayi* and *U. anthracina*, in S. Sinaloa; MILLER, Bull. Amer. Mus. xxi, pp. 345 & 346: *U. anthracina*, from the Island of Santa Lucia, West Indies; CLARK, Auk xxii, p. 210: *U. gundlachii* (Cabanis), is a distinct species; BANGS, Auk xxii, pp. 307-309.
- Tuphdetus lacertorum*, n. sp. [fossil]. Pleistocene of Interior of S. Australia; DE VIS, Ann. Queensland Mus. No. 6, pp. 4-6, pl. i, figg. 1 & 2.
- Aquila chrysaetos*, observations on the nesting in Montana; CAMERON, Auk xxii, pp. 158-167, pls. ii-vi: near Ottawa; EIFRIG, t. c. p. 310.
- Hierax fasciatus*, its occurrence in Cutch; RADCLIFFE, J. Bombay Soc. xvi, pp. 507-511.
- Eutolmides epilogaster* from the Zambesi; SCLATER, Bull. B. O. C. xv, pp. 67 & 68.
- Asturides*, n. gen. [fossil]. Type *A. furcillatus*, n. sp., Pleistocene of Interior of S. Australia; DE VIS, Ann. Queensland Mus. No. 6, pp. 6 & 7, pl. i, fig. 3.
- Circus rufus*, n. sp., German East Africa; REICHENOW, Ornith. Monber. xiii, pp. 179 & 180.
- Pitheophaga jefferyi* in Mindanao; MEARN, P. Soc. Washington xviii, p. 73.
- Halidetus albicilla*, in the Kurische Nehrung, on migration; THIENEMANN, Ornith. Monber. xiii, pp. 7 & 8: in British Columbia; BISHOP, Auk xxii, pp. 79 & 80: in South Wilts.; FISHER, Wiltshire Mag. xxiv, p. 109: *H. leucoryphus* Pall., in Sicily; DE STEFANI-PEREZ, Natural. Sicil. xviii, pp. 51 & 52: id. Avicula ix, pp. 157 & 158.
- Nisus milvus*, nesting in Wales in 1905; MEADE-WALDO, Bull. B. O. C. xvi, pp. 9 & 10, 97 & 98: *M. govinda*, from the Tianshan range; LÖNNBERG, Arkiv Zool. ii, No. 9, p. 5: *M. affinis*, in N.E. Africa is *M. aegyptius* juv.; REICHENOW, J. Ornith. 1905, p. 427.
- Pernis apivorus*, nesting in Prov. Roma, Italy; CHIGI, Boll. Soc. Ital. (2) vi, pp. 93 & 94: Avicula ix, pp. 41 & 42.
- Baza gracilis*, n. sp. [fossil]. Pleistocene of Interior of South Australia; DE VIS, Ann. Queensland Mus. No. 6, pp. 7 & 8, pl. i, fig. 4.
- Microhierax melanoleucus*, breeding in S. E. China; LA TOUCHE & RICKETT, Ibis 1905, pp. 56 & 57.
- Falco peregrinus*, notes on; KLEINSCHMIDT, Falco i, pp. 1-8: note on;

- APLIN, Zoologist 1905, pp. 184 & 185: migration in 1904-1905.
 KLEINSCHMIDT, Falco i, pp. 51 & 52: *F. barbarus germanicus*, figured; id. t. c. Taf. i: *F. peregrinus leucogenys*, near Eisleben; id. Ornith. Monber. xiii, p. 64: *F. mexicanus*, note on; FUERTES, Condor vi, pp. 35 & 36 cum tab: *F. subbuteo*, note on; ALTOBELLO, Avicula ix, pp. 152-154: *F. s. cyanescens*, n. subsp., Baimgol, Tianshan; LÖNNBERG, Arkiv Zool. ii, No. 9, pp. 6 & 7: *F. severus*, nesting in Upper Burma; MACDONALD, J. Bombay Soc. xvi, p. 518: its allies, remarks on; ROTHSCHILD & HARTERT, Nov. Zool. xii, pp. 252 & 253: *F. asalon*, nesting in Breconshire; SWAINSON, Zoologist 1905, pp. 266 & 267: nesting in Derbyshire; FOX, t. c. p. 267; *F. rusticola*, in Wisconsin; SNYDER, Auk xxii, pp. 413 & 414: *F. candicans*, in Co. Donegal; PATTERSON, Irish Natural. xiv, p. 119.
Harpa australis, distinct from *H. nove zealandiae*; GRANT, Ibis 1905, pp. 576-579.
Cerchneis tinnunculus, note on; LÖNNBERG, Arkiv Zool. ii, pp. 5 & 6; *C. ardeniaca*, from the Victoria Nyanza; GRANT, Ibis 1905, p. 211; *C. cenchroides*, in the Djampang district, W. Java; FINSCH, Ornith. Monber. xiii, p. 190.
Pandion haliaetus carolinensis, former status in the Lesser Antilles; CLARK, Auk xxii, pp. 318 & 319.

Order STRIGIFORMES.

- Asio maculosus amerimmas*, n. subsp., Natal to German E. Africa; OBERHOLSER, P. U. S. Mus. xxviii, pp. 856 & 857: *A. otus*, laying in old nests of *Pica pica* and *Cerchneis tinnunculus*; SCHUSTER, Ornith. Monber. xiii, pp. 111 & 112: notes on; GYNGELL, Zoologist 1905, pp. 183 & 184: MOFFAT, t. c. pp. 233 & 234: WARREN, t. c. pp. 234-236, 264-266: HARVIE-BROWN, t. c. pp. 264, 313: OLDHAM, t. c. pp. 311-313: GURNEY, t. c. p. 392: *O. sylvestris*, from the Tertiary formations of Mainz; SCHUSTER, Jahrb. Nassau. Ver., Jahrg. lvi, pp. 33-43, 1903: *A. accipitrinus*, from the Pleistocene of Derbyshire; ARNOLD-BEMROSE & NEWTON, Quart. J. Geol. Soc. 61, p. 56.
Ketupa semenovi, n. sp., Arabistan, W. Persia; SARUDNY, Ornith. Jahrb. xvi, pp. 141 & 142.
Bubo bubo nikolaii, n. subsp., Arabistan; id. t. c. p. 142.
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Huhuia leucosticta (Hartl.), figured; DUBOIS, Ann. Mus. Congo i, p. 19, pl. xi.
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- Stringops habroptilus*, figured; SALVADORI, Gen. Av. Part III, pl. to *Stringopidae*, figg. 1, 1 a-1 e.
- Yellow variety of *Stringops*, head figured; id. t. c. pl. to fig. 2.
- Nessor septentrionalis*, figured; id. t. c. Part iv, pl. figg. 1, 1 a: *N. notabilis*, figg. 2, 2 a: *N. productus*, fig. 3: *N. meridionalis*, figg. 4, 4 a, 4 b: *N. eslingi*, figured; BULLER, Suppl. B. New Zealand ii, pl. viii.
- Cacatua goffini*, figured; SALVADORI, t. c. Part v, pl. to *Cacatuidae*, figg. 1, 1 b: *C. ducorpsi*, head figured; id. t. c. fig. 2: *C. triton*, head figured; id. t. c. pl. ii, fig. 2: *C. roseicapilla*, head figured; id. t. c. pl. ii, fig. 3.
- Calyptrorhynchus banksi*, head figured; id. t. c. fig. 3.
- Microglossus aterrimus*, head figured; id. t. c. fig. 4.
- Collocephalum galeatum*, head figured; id. t. c. pl. i, fig. 5.
- Calopsittacus novaehollandiae*, head figured; id. t. c. pl. ii, figg. 1, 1 a, 1 b.
- Licmetis nasica*, head figured; id. t. c. pl. ii, fig. 4.
- Chalcopsittacus ater* in confinement; JOHNSTONE, Avicult. Mag. (2) iii, pp. 147-149, cum tab.
- Trichoglossus nigrogularis*, figured; HARDING, Avicult. Mag. (2) iv, pl. to p. 21: *T. forsteri* breeding in confinement; MICHELL, t. c. pp. 24 & 25.
- Charmosynopsis placensis pallidior*, n. subsp., Bougainville Island, Solomon Archipelago, with notes on *C. placensis* and *C. subplacensis*; ROTHSCILD & HARTERT, Nov. Zool. xii, p. 253.
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- Amasona martinicana*, new name for the Martinique Parrot; CLARK, *Auk* xii, p. 343: *A. albifrons nana*, n. subsp., S. Sinaloa; MILLER, Bull. Amer. Mus. xxi, p. 349.
- Chrysotis angusta*, egg; MUNT, Bull. B. O. C. xv, p. 51: *C. guildingi*, note on its approaching extinction; NICOLL, op. cit. xvi, p. 23.
- Deropterus accipitrinus fuscifrons*, n. subsp., Parà; HELLMAYER, Nov. Zool. xii, p. 303.
- Prionopsittacus pileatus*, ♂ ♀ figured; ASTLEY, Avicult. Mag. (2) iii, pl. to p. 351.
- Pionites vice Caica*; HELLMAYER, Nov. Zool. xii, p. 303: *P. leucogaster* from Parà; id. t. c. p. 303.
- Polytelis alexandrae*, note on; ASTLEY, Avicult. Mag. (2) iii, pp. 248 & 249.
- Spathopterus alexandrae*, distribution of; KEARTLAND, Victorian Natural. xii, pp. 83 & 84.
- Ptiastes erythropterus*, note on; id. t. c. pp. 142-144.
- Bolbopsittacus mindanensis*, n. sp., S. E. Mindanao; GRANT, Bull. B. O. C. xvi, p. 17 (= *B. mindanensis* Steere; id. t. c. p. 36).
- Loriculus galgulus* on Cagayan Sulu, Philippine Islands; MEARN, P. Soc. Washington xviii, p. 90.
- L. bournsi*, n. sp., Sibuyan Island, Philippines; MCGREGOR, Bureau Govt. Labs. Manila, No. 25, p. 16.
- Cyanorhamphus unicolor*, figured; BULLER, Suppl. B. New Zealand ii, pl. ix.
- Platycercus xanthogenys* Salvad. notes on; HARTERT, Nov. Zool. xii, p. 212.
- Neophema bourkei*, figured; ASTLEY, Avicult. Mag. (2) iii, pl. to p. 239.
- Ognorhynchus* Gray vice *Gnathositta* Cab.; OBERHOLSER, Smithsonian Collect. quart. Vol. 48, p. 61.
- Psittichas* Less. vice *Dasyptilus*; id. t. c. p. 61.
- Euphema* Wagl. vice *Nanodes* Vig. and Horsf.; id. t. c. p. 61.

Order CORACIIFORMES.

Sub-order PODARGI.

- Podargus papuensis* and allied species, notes on; HARTERT, Nov. Zool. xii, p. 216.
- Podargus*, notes on the Australian species; id. t. c. p. 216.
- Egotheles rufa* (olim *rufescens*) Hall = *E. leucogaster* Gould; id. t. c. pp. 216 & 217: *E. nova-hollandiae*, note on; LEGGE, Emu iv, p. 173.

Sub-order CORACIÆ.

- Coracias caudatus* and its allies; ERLANGER, J. Ornith. 1905, pp. 458-460.
- Eurystomus afer* and its allies; NEUMANN, t. c. pp. 184-186.
- E. afer aethiopicus*, n. subsp., Shoa to Kaffa and Gelo River; id. t. c. p. 184: *E. afer suahelicus*, n. subsp., E. Africa; id. t. c. p. 186: *E. afer pulcherrimus*, n. subsp., Angola; id. t. c. p. 186: *E. afer aethiopicus* Neum. t. c. p. 184 = *E. rufobuccalis*; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 825: *E. calonyx* breeding in S. E. China; LA TOUCHE & RICKETT, Ibis 1905, pp. 48 & 49.

Sub-order HALCYONES.

- Pelargopsis gouldi*, nesting habits; MCGREGOR, Bureau Govt. Laba. Manila, No. 34, p. 12, pl. ix.
- Alcedo ispida salomonensis*, n. subsp., Solomon Archipelago (Gizo, Rendova, etc.) and Duke of York Island (?); ROTHSCCHILD & HARTERT, Nov. Zool. xii, p. 255: *A. meninting* and allied forms; FINSCH, Notes Leyden Mus. xxvi, pp. 46-49.
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- Halcyon gularis*, nesting habits; id. t. c. pp. 13 & 14, pl. xi: *H. semicaculeus* and its allies; ERLANGER, J. Ornith. 1905, pp. 446 & 447: *H. albiventris orientalis* and *H. senegaloides* in S. Somali Land; id. t. c. p. 447: *H. semicaculeus* and its three allied forms; NEUMANN, t. c. pp. 189 & 190: *H. s. centralis*, n. subsp., Victoria Nyanza; id. t. c. p. 189: *H. bougainvillei*, figured; ROTHSCCHILD & HARTERT, Nov. Zool. xii, p. 256, pl. x: *H. tristrans alberti*, n. subsp., Solomon Islands (Rendova, Gizo, Bougainville); iid. t. c. pp. 256, 257.

Sub-order BUCEROTES.

- Bucorvus abyssinicus* nesting in a baobab tree at Rosaires; BUTLER, Ibis 1905, p. 353.
- Penelopides panini*, nest and eggs described; MCGREGOR, Bureau Govt. Laba. Manila, No. 25, pp. 25-27, pls. viii & ix.
- Lophoceros melanoleucus* and its allies; NEUMANN, J. Ornith. 1905, pp. 187 & 188: *L. m. goloensis*, n. subsp., Upper Gelo River, N. E. Africa, *L. m. suahelicus*, n. subsp., E. Africa; id. t. c. p. 187: *L. nasutus* and its allies; ERLANGER, t. c. pp. 439 & 440: *L. somaliensis* (fig. 1), *L. neumanni* (fig. 2), figured; REICHENOW, Vög. Afrikas iii, pl. v: *L. granti*, figured; DUBOIS, Ann. Mus. Congo i, p. 9, pl. v.
- Bycanistes*, remarks on the genus; id. t. c. p. 6: *B. leucopygius*, figured; id. t. c. p. 7, pl. iv; *B. sharpei* Elliot = *B. fistulator*, ♂ juv.
- Buceros vici* Grant (nec Dubois), remarks on; id. t. c. p. 9.
- Ortholophus finschi* = *O. cassini*; FINSCH, Ibis 1905, pp. 286 & 287.

Sub-order UPUPE.

- Upupa epops* in Greece, *U. e. pallida*, notes on; PARROT, J. Ornith. 1905, pp. 818-820.
- Irisor viridis* nesting in tree, eggs blue; SCLATER, Bull. B. O. C. xv, p. 40: *I. erythrorhynchus* and its allies; NEUMANN, J. Ornith. 1905, pp. 194-196: *I. e. neglectus*, n. subsp., Shoa and S. Ethiopia; id. t. c. p. 194: *I. erythrorhynchus guineensis* Reichenow, *I. e. abyssinicus* Neum., and *I. e. neglectus* are not separable from true *I. erythrorhynchus*; GRANT, Ibis 1905, pp. 209 & 210: *I. damarensis granti* doubtfully distinct from *I. damarensis*; id. t. c. p. 210: *I. erythrorhynchus* and *I. viridis*, notes on; OBERHOLSER, P. U. S. Mus. xxviii, p. 855.
- Scopelus aterrimus notatus* and its allies; NEUMANN, J. Ornith. 1905, pp. 196 & 197: *S. a. emini*, n. subsp., Upper White Nile; id. t. c. p. 197: *S. a. major*, n. subsp., Lakes of S. Ethiopia; id. t. c. p. 197: *S. aterrimus*; REICHENOW, Vög. Afrikas iii, Nachtrag.
- Rhinopomastus minor somalicus*, n. subsp., Somali Land; ERLANGER, J. Ornith. 1905, pp. 461 & 462.

Sub-order MEROPES.

- Melittophagus pusillus cyanostictus*, notes on ; OBERHOLSER, P. U. S. Mus. xxviii, pp. 852-854 ; *M. oreobates* Sharpe from Mt. Kilimanjaro ; id. t. c. p. 854.
- Merops americanus* P. L. S. Müller antedates *M. bicolor* Bodd. ; MCGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 14 : *M. apiaster* in Yorkshire ; ROBINSON, Zoologist 1905, p. 389 : *M. nubicus*, ad. et juv., figured ; ERLANGER, J. Ornith. 1905, Taf. ix : *M. pusillus* and its allies ; id. t. c. pp. 455 & 456 : *M. variegatus* and its allies ; id. t. c. pp. 456 & 457 : *M. variegatus*, figured ; id. t. c. Taf. x, figg. 1, 1a, 1b : *M. v. lafresmayei*, figured ; id. t. c. Taf. x, figg. 2 a-c : *M. v. oreobates*, figured ; id. t. c. Taf. x, figg. 3, 3d, 3e.

Sub-order MOMOTI.

- Momotus momota parensis* and *M. m. ignobilis*, remarks on ; HELLMAYR, Nov. Zool. xii, p. 296.

Sub-Order TODID.

- Fam. *Todidae* ; WYTSMAN, in Wytsman's Genera Avium, Part II, pl. i. *T. viridis viridis* (figg. 1-4), *T. v. subulatus* (fig. 5), *T. v. multicolor* (fig. 6), *T. v. hypochondriachus* (fig. 7), figured ; id. t. c. pl. i.

Sub-order CAPRIMULGI.

- Chordeiles virginianus hesperis*, n. subsp., Bear Lake, San Bernardino Mts., California ; GRINNELL, Condor vii, p. 170.
- Scotornis climacurus*, *Caprimulgus fossi* and *C. apatellus*, notes on ; NEUMANN, J. Ornith. 1905, pp. 198 & 199.
- Macrodipteryx longipennis* has no power to erect its streamers ; A. L. BUTLER, Ibis 1905, pp. 345-347 : KEMP, Ibis 1905, p. 225.
- Nyctidromus albicollis gilvus*, eggs described ; ALLEN, Bull. Amer. Mus. xxi, p. 281 : *N. derbyanus* Gould, from Central and Southern Brazil, distinguished from *N. albicollis* (Gm.) from Cayenne to N. Brazil ; HELLMAYR, Nov. Zool. xii, p. 297.
- Phalacroptilus*, study of the anatomy ; MARSHALL, P. Amer. Phil. Soc. xlv, pp. 213-240, pls. iv-vi.
- Antrostomus notabilis*, n. sp., Tamaulipas, Mexico ; NELSON, P. Soc. Washington xviii, pp. 111 & 112 : *A. carolinensis* in Kansas ; COLVIN, Auk xxii, p. 81.
- Caprimulgus inornatus* and *C. fossi apatellus*, eggs described ; ERLANGER, J. Ornith. 1905, pp. 498 & 499 : *C. donaldsoni*, figured ; id. t. c. Taf. xv : *C. affinis mindanensis*, n. subsp., S. Mindanao ; MEARN, P. Soc. Washington xviii, p. 85.
- C. griseatus*, note on ; MCGREGOR, Bureau Govt. Labs. Manila, No. 25, p. 14 : *C. europaeus*, note on ; GURNEY, Zoologist 1905, p. 88 : FARREN, t. c. pp. 182 & 183 : *C. apatellus*, notes on ; NEUMANN, J. Ornith. 1905, p. 198 : REICHENOW, Vög. Afrikas iii, Nachtrag, p. 827 : *C. donaldsoni* from Taveta, E. Africa ; OBERHOLSER, P. U. S. Mus. xxviii, p. 858.

Sub-order CYPSELI.

- Collocalia francica inexpectata* on Cagayan Sulu, Philippine Is. ; MEARN, P. Soc. Washington xviii, p. 90.

- Salangana marginata*, nest and eggs described; MCGREGOR, Bureau Govt. Labs. Manila, No. 25, pp. 14 & 15, pl. iii.
- Chatura dubia*, n. sp., Mindoro, Philippines; id. op. cit. No. 34, pp. 15 & 16, pl. xii: *C. pelagica*, habits; WYGANT, Cassinia 1904, pp. 6-14: *C. vauxi*, notes on the nest and eggs; TAYLOR, Condor vii, pp. 177 & 179.
- Cypseloides niger borealis*, discovery of a second egg; VROOMAN, Condor vii, pp. 176 & 177.
- Tachornis parvus laemostigma*, n. consp., S. Somali Land; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 828: note on; ERLANGER, J. Ornith. 1905, pp. 672 & 673: *T. pallidior*, n. sp., Luzon, Philippines; MCGREGOR, Bureau Govt. Labs. Manila, No. 25, pp. 27 & 28.
- Tachynautes*, n. g., type *T. parvus* (Licht.); OBERHOLSER, P. U. S. Mus. xxviii, p. 860: four species recognised; id. t. c. p. 861.
- Micropus* Wolf vice *Cypselus* Illiger; id. t. c. p. 861: *M. myoptilus* (Salvad.) from Mt Kilimanjaro; id. t. c. p. 861.
- Apus*, notes on the species of the Palearctic Region. Six species recognised, with eight sub-species; KOLLIBAY, J. Ornith. 1905, pp. 297-304: *A. apus carlo*, n. subsp., Tunisia; id. t. c. p. 302: *A. melba tuneti*, note on; TSCHUDI, Ornith. Jahrb. xvi, p. 219.
- A. apus kollibayi*, remarks on; KOLLIBAY, Ornith. Monber. xiii, p. 145: *A. unicolor*, breeding on Madeira, Porto Santo, and the Desertas; SCHMITZ, t. c. p. 197-200.

Sub-order TROCHILI.

- Humming-Birds of Argentina; DE MARCHI, Monit. Zool. ital. xvi, pp. 229-233.
- Glaucis hirsuta*, nest described; ALLEN, Bull. Amer. Mus. xxi, p. 281.
- Amisilis beryllina viola*, n. subsp., Sinaloa, Mexico; MILLER, t. c. pp. 353 & 354.
- Iache latirostris*, notes on; id. t. c. pp. 354 & 355.
- Orthorhynchus* Lacep. vice *Bellona* Muls. & Verr.; OBERHOLSER, Smithsonian Collect. quart. Vol. 48, p. 59.
- Heliothrix auriculatus phainolæma* Gould, is distinct from *H. auriculatus*; HELLMAYR, Nov. Zool. xii, p. 297: ranges of the two forms; id. t. c. p. 296.
- Selasphorus rufus*, notes on; FINLEY, Condor vii, pp. 59-62, cum figg.
- Bellona cristatus* is from Barbados, the Grenadines, and Grenada, *B. cristatus cristatus*, from the Grenadines and Grenada, and *B. cristatus emigrans* is restricted to Barbados; CLARK, Auk xxii, pp. 215 & 216.

Sub-Order COLII.

- Colius striatus* and allied forms; ERLANGER, J. Ornith. 1905, pp. 486, 489: *C. a. leucotis*, eggs described; id. t. c. pp. 487 & 488.
- Crocolius* Bp. distinct from *Colius*; OBERHOLSER, P. U. S. Mus. xxviii, p. 863: 7 species recognised, *U. macrourus syntactus*, n. subsp., Abyssinia; id. t. c. p. 863.

Order TROGONES.

- Prionotus temnurus vascus*, n. subsp., Isle of Pines; BANGS & ZAPPEY, Amer. Natural. xxxix, pp. 204-206.

Order COCCYGES.

Sub-order MUSOPHAGI.

Turacus, key to the species ; DUBOIS, Ann. Mus. Congo i, p. 3 : *T. schoutedeni*, figured ; id. t. c. pl. ii : *T. emini* (fig. 1), *T. sharpei* (fig. 2), figured ; id. t. c. pl. iii : *T. livingstonei* and its allies, *T. chalcophaps* from Mpala, Lake Tanganyika ; id. t. c. p. 5 : *T. persa*, egg ; MUNT, Bull. B. O. C. xv, p. 51 : *T. corythoides*, figured, with nest and eggs ; IVY, Journ. S. Afr. Orn. Union i, pl. v.

Sub-order CUCULI.

Pachycoccyx validus (Reichenow), figured ; DUBOIS, Ann. Mus. Congo i, p. 1, pl. i, fig. 2.

Cuculus canorus, an attempt to ascertain from the dimensions of the egg if the species is tending to break up into subspecies ; LATHE, Biometrika iv, pp. 363-373 : notes on the mimicry, etc. ; GÉBELL, Aquila xii, pp. 338 & 339 ; BARTOS, t. c. p. 339 : breeding habits ; WILSON, Zoologist 1905, pp. 310 & 311 : FLEMING, Irish Natural. xiv, p. 164 : id. Zoologist 1905, pp. 232 & 233 : observations on the nestling ; GURNEY, t. c. pp. 164-169 : notes on its eggs ; REY, J. Ornith. 1905, pp. 304-310 : notes on ; RASPAIL, Bull. Soc. zool. France xxx, pp. 29-39, text-figg. 1-4 : dates of arrival in 1902 ; HUTCHINSON, Tr. Woolhope Club 1904, pp. 46-48.

Columba pallida Lath. (ex Latham's "Pale Pigeon") is not *Cuculus variegatus*, as generally assigned ; HARTERT, Nov. Zool. xii, pp. 217 & 218. Cf. also SHARPE, Hist. Coll. Brit. Mus. Birds, p. 145.

Cacomantis flabelliformis, note on ; BRENT, Emu v, p. 86.

Eudynamis orientalis, n. sp., Solomon Ida. ; ROTHCHILD & HARTERT, Nov. Zool. xii, p. 257.

Urodynamis taitensis, habits of ; FULTON, Rep. Australas. Ass. x, pp. 310-326.

Centropus anselli in Camaroons ; SHARPE, Ibis 1905, p. 466.

Saurothera merlini decolor, n. subsp., Isle of Pines ; BANGS & ZAPPEY, Amer. Natural. xxxix, pp. 199 & 100.

Piaya cayana and its allies, *P. c. guianensis*, and *P. c. cabanisi*, notes on ; HELLMAYR, Nov. Zool. xii, p. 298.

Order SCANSORES.

Sub-order INDICATOIRES.

Indicator, notes on the African species ; ERLANGER, J. Ornith. 1905, pp. 464-469.

Prodotiscus ellenbecki Erl. and *P. regulus* Sund., geographical range ; ERLANGER, J. Ornith. 1905, pp. 489 & 490, Taf. xiii & xiv : *P. peasei* and *P. zambesiae* are not identical with *P. regulus* ; GRANT, Ibis 1905, pp. 210 & 211.

Sub-Order CAPITONES.

Lybius, notes on species ; ERLANGER, J. Ornith. 1905, pp. 490 & 491 : *L. abbotti* (Richmond) and its allies ; OBERHOLSER, P. U. S. Mus. xxviii, p. 864.

Tricholama, notes on species ; ERLANGER, J. Ornith. 1905, pp. 491-493.

- Trachyphonus erythrocephalus* and *T. shelleyi*, remarks on ; id. t. c. pp. 469 & 470.
- Viridibucco*, n. gen. type *V. leucomystax* (Sharpe) ; OBERHOLSER, P. U. S. Mus. xviii, p. 865.
- Barbatula pusilla*, *B. chrysocome* and their allies, notes on ; ERLANGER, J. Ornith. 1905, pp. 494-496.
- B. rubrigularis*, n. sp., Katanga, R. Congo ; DUBOIS, Ann. Mus. Congo i, p. 1, pl. i, fig. 1.
- Xylobucco* Bp. vice *Barbatula* Less. (nec Linck.), *Lignobucco* Reichenow, *Buccanodon* Hartl., and *Cladurus* Reichenow, all = *Xylobucco* Bp., characters of the genera *Stactolama*, *Smilorhis*, and *Xylobucco* given, with list of species ; OBERHOLSER, P. U. S. Mus. xviii, pp. 865-868.
- Cyanops franklini*, in confinement ; PHILLIPPS, Avicult. Mag. (2) iii, pp. 323-330 cum tab.

Sub-order RHAMPHASTIDES.

- Rhamphastos theresae*, n. sp., Rio Paranahyba ; REISER, Anz. Ak. Wiss. 1905, No. xviii, p. 322.
- Rhamphastos hamatorhynchus* Berlepsch & Hartert = *R. erythrorhynchus* Gm. ; HELLMAYR, Nov. Zool. xii, p. 299.
- R. levaillanti*, notes on ; id. t. c. p. 299.
- Pteroglossus wiedi* = *P. aracari* ; id. t. c. p. 300.

Order PICIFORMES.

Sub-order BUCCONES.

- Bucco ruficollis*, eggs, found in clay nest of *Furnarius agnatus*, described ; ALLEN, Bull. Amer. Mus. xxi, p. 280.
- Monasa peruana* Sc., scarcely distinct from *M. morphnus* (Hahn) ; HELLMAYR, Nov. Zool. xii, p. 297.

Sub-order PICI.

See LEISEWITZ (388).

- Colaptes auratus*, in Colorado ; FELGER, Auk xxii, p. 421.
- Gecinys viridis innominatus*, n. subsp., Western Persia ; SARUDNY & LOUDON, Ornith. Monber. xiii, p. 49 : *G. canus* and *G. viridicanus*, remarks on ; KOLLIBAY, t. c. pp. 143-145.
- Dendromus*, notes on, *D. malherbei* and allied species ; ERLANGER, J. Ornith. 1905, pp. 473-477 : *D. mombassicus*, figured ; id. t. c. Taf. xi : *D. nubicus*, figured ; id. t. c. Taf. xii.
- Melanerpes erythrocephalus*, at Detroit, Michigan ; SWALES, Auk xxii, p. 80.
- Dendrocopos major* and its allies ; MARTORELLI, Atti Soc. Ital. xlv, pp. 153-164 : *D. medius splendidior*, n. subsp., W. Balkans ; PARROT, J. Ornith. 1905, p. 555 : *D. minor danfordi*, in Greece ; id. t. c. p. 556.
- Picus owstoni*, n. sp., Amami-Oshima ; OGAWA, Annot. zool. Japon. v, pp. 203-205, pl. x.
- Dryobates villosus piger*, n. subsp., Great Bahama Island ; ALLEN, Auk xxii, pp. 124-126.
- Picoides arcticus*, at Melrose, Middlesex County, Mass. ; WRIGHT, t. c. p. 80.

- Dendropicus*, notes on various species; ERLANGER, J. Ornith. 1905, pp. 477-480: *D. lafremayeri* (fig. 1), *D. pacilolamensis* (fig. 2), *D. stierlingi* (fig. 3) figured; REICHENOW, Vög. Afrikas iii, pl. vi.
- Mesopicus griseocephalus kivuensis*, n. subsp., Lake Kiwu, E. Africa; Vög. Afrikas iii, Nachtrag, p. 824.
- Chrysocolaptes xanthopygius*, n. sp., Sumatra and Borneo; FINSCH, Notes Leyden Mus. xxvi, pp. 34-36: *C. montanus*, n. sp., S. E. Mindanao; GRANT, Bull. B. O. C. xvi, p. 16: *C. gutticristatus* and *Tiga shora*, similarity of plumage; GRANT, op. cit. xv, pp. 68 & 69.
- Campephilus principalis*, unusual plumage; WAYNE, Auk xxii, p. 414.
- Ceophloeus pileatus abieticola*, in Massachusetts; BRIDGE, t. c. p. 414.
- Lynx pectoralis* and its allies, notes on; ERLANGER, J. Ornith. 1905, pp. 471 & 472.

Order EURYLÆMIFORMES.

- Contributions to the osteology and remarks on the systematic position; PYCRAFT, P. Zool. Soc. London 1905, vol. ii, pp. 30-56, pl. ii, text-figs. 13-15.
- Fam. *Eurylæmidae*; HARTERT, in Wytman's 'Genera Avium,' pp. 1-8, pl. i: *Serilophus lunatus rothschildi*, figured; id. t. c. pl. i, fig. 5; *Parisomus dahousia*, tail figured; id. t. c. pl. i, fig. 7: heads of *Corydon*, *Eurylaimus*, *Cymborhynchus*, *Calypptomena*, *Sarcophanops*, figured; id. t. c. pl. i, figs. 1-4, 6.
- Corydon sumatranus*, nest and eggs described; GRANT, Fascic. Malay. Zool. iii, p. 79.
- Cymborhynchus macrorhynchus*, nest and eggs described; GRANT, t. c. pp. 96 & 97.

Order MENURIFORMES.

- Menura victoriae*, distribution and life history; KITSON, Emu v, pp. 57-67, pls. v-x.

Order PASSERIFORMES.

Family PTEROPTOCHIDÆ.

- The family name should be *Hylactidæ*; MENEGAUX & HELLMAYR, Bull. Mus. Paris 1905, p. 378.
- Scytalopus acutirostris* and *S. griseicollis*, notes on; iid. t. c. p. 19: *S. niger*, distinct from *S. magellanicus*, of which *S. albifrons* Landb., is a synonym; iid. t. c. pp. 378-380.
- Pteroptochus femoralis* Tschudi, and *P. acutirostris* Tschudi, referred to *Scytalopus*; the former perhaps a young bird of *S. magellanicus*; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 17-19.
- Scytalopus macropus* and allies, remarks on; iid. t. c. p. 18.

Family CONOPOPHAGIDÆ.

- Conopophaga*, notes on the genus; MENEGAUX & HELLMAYR, Bull. Mus. Paris 1905, pp. 374-378: *C. nigrogenys* Less. and *C. dorsalis* = *C. melanops* (V.); iid. t. c. p. 376: *C. perspicillata* (Licht.), distinct; iid. t. c. p. 377: *C. roberti*, n. sp., Parà; HELLMAYR, Bull. B. O. C. xv, p. 54: further notes on; id. Nov. Zool. xii, p. 292.
- Corythopsis humiragans* Tacz. = *C. torquata* Tschudi; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 16: *C. torquata* Tschudi and *C. t. anthoides* Pucher., notes on; iid. t. c. pp. 16 & 17.

Family FORMICARIIDÆ.

- Thamnophilus olivaceus* Tschudi, is an ally of *Dysithamnus mentalis*, and is to be called *D. m. olivaceus*; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 14 & 15: *D. olivaceus* auct. (nec Tschudi), from Brazil, is *D. affinis* Pelz., allied to *D. spodiopnotus* Salv. & Godm.; iid. t. c. p. 16.
- T. simplex* Scl. (= *T. incertus* Pelz.), *T. schistaceus* D'Orb. and *T. plumbeus* Neuwied referred to the genus *Dysithamnus*; HELLMAYR, Nov. Zool. xii, pp. 284 & 285: *T. inornatus* Ridgw. = *D. schistaceus*; id. t. c. pp. 284 & 285: *T. melanopnotus*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, pp. 289 & 290: *T. axillaris* Tschudi is a *Herpsilochmus*; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 16: *H. puncticeps* Tacz. = *H. axillaris*; iid. t. c. p. 16: *T. gorgonæ*, n. sp., Gorgona Is., Colombia; THAYER & BANGS, Bull. Mus. Harvard xlvii, p. 95: *T. camopiensis*, n. sp., Camopi river, French Guiana; MENEGAUX, Bull. Mus. Paris 1904, pp. 175 & 176.
- Thamnomanes czeisii* from Pará; HELLMAYR, Nov. Zool. xii, p. 285.
- Cercomacra sclateri*, nom. nov., Upper Amazonia (Chyavctas) and *C. brasiliensis*, nom. nov., Rio. Review of the species; HELLMAYR, Nov. Zool. xii, pp. 286-289.
- Gymnophithys cristata* (Pelz.), notes on; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 33.
- Hypocnemis vidua*, n. sp., Pará; HELLMAYR, Nov. Zool. xii, p. 290.
- Formicivora intermedia*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 289.
- Myrmeciza hemimelana pallens*, n. subsp., Matogrosso, C. Brazil; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 32 & 33.
- Formicarius ruficeps amazonicus*, n. subsp., Pará; HELLMAYR, Nov. Zool. xii, p. 292.

Family DENDROCOLAPTIDÆ.

- Aphrastura fulva*, n. sp., Chili; ANGELINI, Boll. Soc. ital. (2) vi, pp. 227-230.
- Synallaxis griseiventris*, n. sp. (nec Allen), Bahia; REISER, Anz. Ak. Wiss. No. xviii, pp. 323 & 324: renamed *S. hellmayri*; id. Ornith. Monber. xiii, p. 210.
- Anabates montanus* is a *Philydor*; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 13: *Philydor montanus striaticollis* (Scl.), not an *Anabazenops*; iid. t. c. p. 13: *A. variegaticeps* and *A. temporalis* referred to the genus *Philydor*; iid. t. c. p. 13: *A. ochrolæmus* Tschudi is an *Automolus*; iid. t. c. p. 13: *A. o. turdinus*, notes on; iid. t. c. p. 14: *A. melanorhynchus* Tschudi is an *Automolus*, *A. striaticeps* Scl. & Salv. is synonymous, *A. subulatus* (Spix) is a distinct species; iid. t. c. p. 14.
- A. concolor* Pelz. = *Automolus rectirostris* (Wied.); BERLEPSCH & HELLMAYR, t. c. pp. 28 & 29: *A. rubidus* Scl. = *A. rectirostris*; iid. t. c. p. 29: *A. dimidiatus* Pelz. is a *Philydor*; iid. t. c. p. 29: *A. infuscatus* Pelz. = *Philydor amaurotis* (Temm.); iid. t. c. p. 31.
- Anumbius ferrugineigula* is a *Thripophaga*; iid. t. c. pp. 27 & 28: *T. sclateri* is synonymous; iid. t. c. p. 28.
- Thripophaga berlepschi*, n. sp., Leimabamba, N. Peru; HELLMAYR, Nov. Zool. xii, p. 503.
- Philydor amaurotis* and *P. lichtensteini*, notes on, with synonymy; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 30-32.
- Automolus cinnamomeigula*, n. sp., Bogotá; HELLMAYR, Bull. B. O. C. xv, p. 55.

- Megaxenops*, n. g., type *M. parnaguae*, n. sp., Paranagua, Brazil; REINH. Anz. Ak. Wiss. 1905, No. xviii, pp. 322 & 323.
Dendroornis fraterculus Ridgw. = *D. epixi* (Less.); HELLMAYR, Nov. Zoon. xii, pp. 282 & 283.
D. insignis, n. sp., Samiria, Upper Amazonia; id. Bull. B. O. C. xv, p. 56.
Xiphorhynchus Swains. vice *Dendroornis* Eyton; OBERHOLSER, Smithsonian Collect. quart., vol. xlviii, pp. 62 & 63.
Xiphornis, nom. nov. pro *Xiphorhynchus* auct. nec Swains.; id. t. c. pp. 63 & 64.

Family TYRANNIDÆ.

- Copurus funebris* = *C. colonus*; HELLMAYR, Bull. B. O. C. xv, pp. 72 & 73.
Rhynchocyclus flaviventris, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 284.
Todirostrum fumifrons penardi, n. subsp., Surinam; HELLMAYR, Bull. B. O. C. xv, pp. 90 & 91: *T. nigricope*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 286.
Euscarthmus rufipes Cab. and *E. pelzelni* Scl. & Salv. = *E. margaritaceiventris* (D'Orb. & Lafr.), *E. m. wuchereri*, from Bahia district; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 10 & 11: *E. impiger*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 286.
Serpophaga subcristata, its food and migration; GOELDI, Ibis 1905, pp. 169-179.
Phyllomyias reiseri, n. sp., Piahy, S. E. Brazil; HELLMAYR, Bull. B. O. C. xv, p. 73: *P. lividus* Pelz. and *P. berlepschi* Scl. = *P. incanescens* (Wied.); BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 24 & 25: *P. burmeisteri* and *P. bolivianus paulistus* Ihering = *P. virescens* (Temm.); iid. t. c. p. 25.
Acrochordopus, n. gen., type (1) *Phyllomyias subviridis* (Pelz.) and (2) *Tyranniscus leucogonyx* Scl. & Salv.; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 26 & 27.
Myiopatis semifusca, mischievous as a disseminator of seeds of the parasitic *Loranthaceæ*; GOELDI, Ibis 1905, pp. 169-179, text-figg. 12-14.
M. superciliaris Reinh. = *Phaomyias murina* (Spix); BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 2 & 3: *P. semifusca* Scl. = *P. murina incomita* (Cab. & Heine); iid. t. c. p. 3: *P. modesta* Reinh. and *P. platyrhyncha* Scl. & Salv. = *Sublegatus fasciatus* (Thunb.); iid. t. c. pp. 4 & 5.
Tyranniscus frontalis Berlepsch & Stolzmann = *T. viridiflavus* (Tschudi); iid. t. c. p. 11.
Elainea, notes on the species; iid. t. c. pp. 1 & 2: *E. lundii* Reinh. = *E. albivertex* Pelz. juv.; iid. t. c. pp. 1 & 2: *E. sororia* Bangs = *E. albivertex*; iid. t. c. p. 2: *E. modesta* Tschudi = *E. albiceps* Lafr. & D'Orb. (pt.) and *E. gigas* Scl. (pt.); iid. t. c. p. 12: *E. brevirostris* Tschudi = *Sublegatus fasciatus* (Thunb.); iid. t. c. p. 12: *E. gracilis* Tacz. = *Sublegatus fasciatus* (Thunb.); iid. t. c. p. 5: *E. viridiflava* is a *Tyranniscus*; iid. t. c. pp. 11 & 12: *T. frontalis* Berl. & Stolzmann = *T. viridiflavus*; iid. t. c. p. 11: *E. pagana*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 285.
Phaomyias, notes on the two species, *P. murina* (Spix), and *P. m. incomita* (Cab. & Heine), *P. semifusca* (Scl.) = *P. incomita*; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 3.
Sublegatus incanescens Salv. & Godm., Ibis 1880, p. 124 = *Phyllomyias griseiceps* (Scl. & Salv.); iid. t. c. p. 5: *S. fasciatus* (Thunberg, 1822),

- its synonymy [*Muscipeta brevirostris* Laf. & D'Orb., *Phyllomyias modesta* Reinh., *P. platyrhyncha* Scl. & Salv., *Sublegatus griseocularis* are synonyms]; iid. t. c. pp. 4 & 5: *S. frontalis* Salvad. and *Elainea gracilis* Tacz. = *S. fasciatus* (Thunb.); iid. t. c. p. 5.
- Myiozetetes similis colombianus*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, pp. 284 & 285.
- Myiodynastes audax nobilis*, nest and eggs described; id. t. c. pp. 283 & 284.
- Magarkynchus pitangus*, nest and eggs described; id. t. c. p. 283.
- Myiobius navius furfureus*, n. subsp., Saboga Is., Bay of Panama; THAYER & BANGS, Bull. Mus. Harvard xvi, pp. 152 & 153.
- Empidochanes albirostris* Cab. = *E. vireoninus* Ridgw., *E. cabanisi canescens* Chapm. = *E. fuscatus cabanisi* (Léot.); BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 21: notes on *E. fuscatus* (Wied), *E. eulerei* Cab. and *E. f. bimaculatus*; iid. t. c. pp. 21-23.
- Empidochanes argentinus* is an *Empidonax*, *E. brunneus* Ridgway, probably = *E. eulerei* or *E. argentinus*; iid. t. c. p. 23: *E. pacilocercus* and *E. pacilurus*, characters of the two species; iid. t. c. p. 27.
- Empidonax insulicola* Oberh. = *E. difficilis*; GRINNELL, Condor vii, pp. 51 & 52.
- Horizopus richardsoni richardsoni*, from S. Sinaloa; MILLER, Bull. Amer. Mus. xxi, p. 356.
- Contopus brachyotus*, nest and eggs described; ALLEN, t. c. pp. 282 & 283.
- Myiarchus erythrocerus*, nest and eggs described; id. t. c. p. 282.
- Tyrannus melancholicus satrapa*, nest and eggs described; id. t. c. p. 281: *E. verticalis*, breeding habits; HUNTER, Condor vii, p. 53.

Family PIPRIDÆ.

- Pipra exquisita*, n. sp., C. Peru; HELLMAYR, Bull. B. O. C. xv, pp. 56 & 57: *P. opalizans*, notes on; id. Nov. Zool. xii, p. 294.
- Chiroziphia lanceolata*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 288.
- Manacus manacus abditivus*, nest and eggs described; id. t. c. pp. 287 & 288.

Family COTINGIDÆ.

- Tityra cayana* from Pará; HELLMAYR, Nov. Zool. xii, p. 294: *T. intermedia* Cab. and Heine = *T. brasiliensis* ♀; id. t. c. pp. 294 & 295.
- Pachyrhamphus cinereiventris*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 287.
- Lathria cinerea* and *L. plumbea*, notes on; HELLMAYR, Nov. Zool. xii, p. 295.
- Lipaugus* [potius *Lipaugus*] *holerythrus rosenbergi*, n. subsp., S.W. Colombia and N. W. Ecuador; HARTERT, Bull. B. O. C. xvi, p. 12.
- Hamatoderus militaris* from Pará, notes on; HELLMAYR, Nov. Zool. xii, pp. 295 & 296.

Family XENICIDÆ.

- Acanthidoxa citrina* (Gm.) distinct from *A. chloris* (SPERM.). Both from South Island, N. Z.; GRANT, Bull. B. O. C. xv, pp. 82-84; id. Ibis 1905, pp. 594-597: anatomy; PYCRAFT, t. c. pp. 603-621, pl. xiii.
- Xenicus longipes* (fig. 1) and *X. stokesi* (figg. 2 & 3) figured; GRANT, Ibis 1905, pl. xii: *X. gilviventris* Pelz. distinct; id. t. c. p. 594: *X. stokesi*, figured; BULLER, Suppl. B. New Zealand ii, pl. xi.
- Traversia insularis*, figured; id. t. c. pl. x.

Family HIRUNDINIDÆ.

- Chelidon urbica*, notes on; FISCHER-SIGWART, Mt. Aargau. Ges. pp. 1-154.
- Riparia arabica*, n. sp., S. Arabia; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 828: *R. cincla erlangeri*, n. subsp., S. Abyssinia; REICHENOW, J. Ornith. 1905, p. 673.
- Hirundo rustica* in snow; OTTO, Ornith. Monber. xiii, p. 11: nesting habits; CUMMINGS, Zoologist 1905, pp. 121-123: MILLS, t. c. pp. 180 & 181: RUSSELL, t. c. p. 181: OLDHAM, t. c. pp. 181 & 182: *H. rustica* and other species, migration; SCHUSTER, Zool. Garten xlv, pp. 300-307: *H. lucida subalaris*, n. subsp., Congo; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 829: *H. lucida* and *H. emini* near Adis Abeba, Abyssinia; ERLANGER, J. Ornith. 1905, p. 676: *H. puella abyssinica* (Guér.) distinct from the true *H. puella* which is from West Africa; OBERHOLSER, P. U. S. Mus. xviii, p. 933: *Hirundo rustica rustica*, from Pantar, Mindanao, Philippine Is.; MEARNs, P. Soc. Washington xviii, p. 90.
- Progne subis*, decrease in numbers on Long Island; KOBBE, Auk xxi, p. 211: *P. subis hesperia*, date of arrival at Stockton, California; BELDING, Condor vii, p. 113.
- Petrochelidon lunifrons lunifrons*, distribution in Utah; GOODWIN, Condor vii, p. 52.
- Psalidoprocne holomelana massaica* Neum. = *P. holomelana* (Sund.); REICHENOW, Vög. Afrikas iii, Nachtrag, p. 829: *P. petiti* and *P. reichenowi*, notes on; id. t. c. p. 829.

Family MUSCIPIDÆ.

- Microea pallida* = *M. assimilis*; HARTERT, Nov. Zool. xii, p. 219.
- Alceonax murinus* and its allies, notes on; NEUMANN, J. Ornith. 1905, pp. 206-208: *A. m. djamdjamensis*, n. subsp., Djam-djam district, N. E. Africa; id. t. c. p. 206.
- Bradyornis griseus*, var. *erlangeri*, Somali Land; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 830: its eggs; ERLANGER, J. Ornith. 1905, pp. 680 & 681.
- Dioptrornis chocoletinus*, its eggs; id. t. c. pp. 681 & 682: *D. kiwuiensis*, n. sp., Lake Kiwu; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 830.
- Muscipapa grisola* harrying bee-hives; CSÖRGEY, Aquila xii, pp. 331-334: at the Flannan Islands; CLARKE, Ann. Scott. Nat. Hist. 1905, p. 244: its habits; SCHUSTER, Ornith. Monber. xiii, pp. 205-207: *M. g. neumanni* Poche = *M. grisola*; NEUMANN, J. Ornith. 1905, p. 206: *M. atricapilla* and its allies, *M. a. semitorquata* and *M. a. speculigera*, notes on; PARROT, J. Ornith. 1905, pp. 539-542.
- Butalis grisola* var. *pallida*, n. subsp., E. Persia; SARUDNY, Denkschr. K. Russ. Geogr. Ges. xxxvi, p. 363 (1903); Cf. OTTO, Ornith. Monber. xiii, p. 135.
- Ficedula* Briss. vice *Hedymela* Sundev.; OBERHOLSER, Smithsonian Collect. quart. xlviii, pp. 65 & 66.
- Cichlomyia*, n. gen., Type *Butalis cærulescens* Hartl.; OBERHOLSER, P. U. S. Mus. xxviii, p. 908.
- Arizelomyia*, n. gen., Type *A. latirostris* (Raff.) ; id. t. c. p. 910.
- Muscipapa*, *Ficedula*, *Alceonax* and *Dioptrornis*, characters of the genera and list of species; id. t. c. pp. 909-911.
- Melanodryas picatus* distinct from *M. bicolor*; HARTERT, Nov. Zool. vii, p. 220.
- Muscicapula montigena*, n. sp., Mount Apo (6000 feet), Mindanao, Philippine Is.; MEARNs, P. Soc. Washington xviii, p. 8.

- Gerygone flavida* Ramsay is distinct from *G. personata* Gould; DE VIS, Ann. Queensland Mus. No. 6, pp. 41 & 42: *G. fusca*, note on; id. t. c. p. 44: *G. rhizophora*, n. sp., Mindanao; MEARNS, P. Soc. Washington xviii, p. 7: *G. cinerascens* from N. W. Australia; HARTERT, Nov. Zool. xii, p. 221.
- Pseudogerygone igata* from the South Island, New Zealand, distinct from *P. javiventris* of the North Island; GRANT, Bull. B. O. C. xv, pp. 80 & 81: *P. albofrontata*, figured; BULLER, Suppl. B. New Zealand ii, pl. xii, fig. 1.
- Chaniopsis gayi*, nest and eggs described; BRYAN, Pap. B. P. Bishop Mus. ii, pp. 40-44, figg. i & ii.
- Pecilodryas* and *Eopsaltria* belong to the *Muscicapidae* and not to the *Laniidae*; HARTERT, Nov. Zool. xii, p. 231: *P. cinereiceps*, n. sp., N. Australia; id. t. c. p. 231.
- Chloropeta batesi*, n. sp., Camaroons, W. Africa; SHARPE, Ibis 1905, p. 468: *C. kenya* Sharpe = *C. similis* Richmond; OBERHOLSER, P. U. S. Mus. xxviii, p. 912: *C. minulla*, n. sp., Usambara, German East Africa; REICHENOW, Ornith. Monber. xiii, p. 181.
- Batis orientalis* and *B. o. minor*, nests and eggs; ERLANGER, J. Ornith. 1905, pp. 284 & 285: *B. mixta* and *B. dimorpha*, notes on; OBERHOLSER, P. U. S. Mus. xxviii, pp. 912 & 913: *B. diops*, n. sp., Ruwenzori Range, Equatorial Africa; JACKSON, Bull. B. O. C. xv, p. 38.
- Hypodès* Cass. distinct from *Parisoma*; REICHENOW, Vög. Afrikas iii, p. 523.
- Diaphorophya blissetti* in Sierra Leone; KEMP, Ibis 1905, p. 229: *D. anorgei*, n. sp., Benguela; HARTERT, Bull. B. O. C. xv, p. 74.
- Platystira peltata* from S. Somali Land; ERLANGER, J. Ornith. 1905, p. 685: *P. cyanea albifrons*, and its allies; NEUMANN, t. c. pp. 210 & 211: REICHENOW, Vög. Afrikas iii, p. 832: *P. c. nyansa*, n. subsp., Victoria Nyansa; NEUMANN, t. c. p. 210: *P. c. aethiopica*, n. subsp., Shoa to the Omo River; id. t. c. p. 211: *P. cryptoleuca*, n. sp., Usari River, E. Africa; OBERHOLSER, P. U. S. Mus. xxviii, p. 913.
- Smithornis capensis albigularis* Hartert = *S. capensis* (Smith); REICHENOW, Vög. Afrikas iii, Nachtrag, p. 831: *S. camaronensis*, n. sp., Camaroons, W. Africa; SHARPE, Ibis 1905, p. 469.
- Artomyias fuliginosa*, nestling plumage; id. t. c. p. 470.
- Hypothymis occipitalis*, nest and eggs described; MCGREGOR, Bureau Govt. Labs. Manila, No. 34, pp. 18 & 19, pl. xiii.
- Trochocercus bivittatus* in S. Somali Land; ERLANGER, J. Ornith. 1905, p. 686: *T. reichenowi* in Sierra Leone; KEMP, Ibis 1905, p. 230.
- Rhipidura albina* allied to *R. cockerelli*; ROTHSCILD & HARTERT, Nov. Zool. xii, p. 260.
- Terpsiphone speciosa* Cass. figured; DUBOIS, Ann. Mus. Congo i, p. 11, pl. vii, fig. 1: *T. melanura* Reichenow, figured; id. t. c. p. 12, pl. vii, fig. 2: *T. ignea* Reichenow, figured; id. t. c. p. 13, pl. vi, fig. 2.
- Tchirea melanura* may be only a phase of plumage of *T. viridis*; ERLANGER, J. Ornith. 1905, p. 688: *T. viridis ferreti*, notes on; NEUMANN, J. Ornith. 1905, pp. 211-213: nestling described; SHARPE, Ibis 1905, p. 470.
- Elminia longicauda*, nestling plumage; id. t. c. p. 470.
- Rhinomyias goodfellowi*, n. sp., S. E. Mindanao; GRANT, Bull. B. O. C. xvi, pp. 17 & 18.
- Myiagra ferrocyanæ ferrocyanæ* and *M. f. feminina*, notes on; ROTHSCILD & HARTERT, Nov. Zool. xii, p. 261.
- Cryptolopha umbrivirens*, nest and eggs; ERLANGER, J. Ornith. 1905, pp. 683 & 684: and its allies; NEUMANN, J. Ornith. 1905, pp. 206 & 209: *C. u. omoensis*, n. subsp., Omo River; id. t. c. p. 208: *C. umbrivirens dorcadichroa* Reichenow and Neumann, notes on the species

- and on *C. u. mackensiana*; OBERHOLSER, P. U. S. Mus. xviii, pp. 817 & 917.
- Abornis schwaneri* Blyth and *A. vordermanni* (Bütt.) = *A. superciliosus* (Tick.); FINSCH, Notes Leyden Mus. xvi, pp. 62 & 63.
- Miro traversi*, figured; BULLER, Suppl. B. New Zealand ii, pl. xii, fig. 2.
- M. bulleri*, n. sp., South Is., New Zealand, SHARPE, in Buller, B. N. ii, p. 124.
- Piezorhynchus florenciae* Sharpe = *Monarcha richardsii* (Ramsay); ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 263.
- Monarcha kulambangra meeki*, n. subsp., Rendova Island, Solomon Archipelago; iid. t. c. p. 262: *Pomarea ribbei* = *M. castaneiventris erythrosticta* (Sharpe); iid. t. c. p. 263.
- Conopothorax*, n. gen., vice *Chenorhamphus* Oust. (nec Gray); OBERHOLSER, Smithson. Collect. quart. xviii, p. 66.

Family CAMPOPHAGIDÆ.

- Artamides mindorensis*, nest and eggs described: MCGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 19, pl. xiv.
- Graucalus velchmani*, remarks on; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 263: *G. pusillus ombrionus*, n. subsp., Solomon Islands (Gizo, Rubiana, Kulambangra, Rendova); iid. t. c. p. 264: *G. pusillus nigrifrons*, notes on; iid. t. c. p. 264: *G. holopolius* Sharpe is an *Edolisoma*; iid. t. c. p. 265: *G. melanops*, in New Zealand; HUTTON, Tr. N. Zealand Inst. (2) xx, pp. 350 & 351.
- Edolisoma elusum*, n. sp., Mindoro, Philippines; MCGREGOR, Bureau Govt. Labs. Manila, No. 34, pp. 19 & 20.
- Pericrocotus johnstoniae*, n. sp., S. E. Mindanao; GRANT, Bull. B. O. C. xvi, p. 18.

Family PYCNONOTIDÆ.

- Hypsipetes*, notes on the Japanese species; *H. amaurotis magnirostris*, n. subsp., S. Dionisio, Volcano Islands; HARTERT, Bull. B. O. C. xv, p. 46.
- Andropadus roehli*, n. sp., Usambara, German East Africa; REICHENOW, Ornith. Monber. xiii, p. 181.
- Pycnonotus barbatus schoanus* Neumann, Ornith. Monber. 1905, p. 77 is a race of *P. arsinos*, unde *P. a. schoanus*; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 840: *P. a. somaliensis*, n. subsp., N. Somali Land; id. t. c. p. 840: *P. spurius*, n. sp., Ennia Galla Land; id. t. c. p. 841: *P. arsinos schoanus* and *P. a. somaliensis*, *P. dodsoni*, eggs described; ERLANGER, J. Ornith. 1905, pp. 712-715: *P. xanthorrhous*, nesting in Upper Burma; HARRINGTON, J. Bombay Soc. xvi, pp. 740 & 741: *P. robinsoni*, n. sp., Tanjong, Patani, Malay Peninsula; GRANT, Fascio. Malay. Zool. iii, pp. 85 & 86.
- Poliolophus nieuwenhuisii*, n. sp., Upper Kajan, Dutch Borneo; FINSCH, Notes Leyden Mus. xvi, p. 96, Taf. i.
- Thapsinillas* n. g., Type *T. affinis* (Homb. et Jacq.); OBERHOLSER, Smithson. Collect. quart. iii (2), pp. 161 & 162.
- Acritillas* n. g., Type *A. ictericus* (Strickl.); id. t. c. pp. 162 & 163.
- Arizelocichla* n. g., Type *A. nigriceps* (Shelley); id. t. c. pp. 163 & 164.
- Calyptocichla*, n. nom. pro *Trichites* Heine (nec Lycett); id. t. c. pp. 165 & 166.
- Charitillas* n. g., Type *C. gracilis* (Cab.); id. t. c. p. 168.
- Stelgidocichla* n. g., Type *S. latirostris* (Strickl.); id. t. c. pp. 168 & 169.

- Trichophorus* Temm. vice *Criniger*; id. t. c. pp. 150-152.
Idiocichla n. g., Type *I. notatus* (Cassin); id. t. c. p. 153.
Thescelocichla n. g., Type *T. leucopleurus* (Cassin); id. t. c. pp. 154 & 155.
Atimastillas n. g., Type *A. flavicollis* (Swains.); id. t. c. pp. 155 & 156.
Prospheorocichla n. g., Type *P. scandens* (Swains.); id. t. c. pp. 156 & 157;
P. scandens ucedis, n. subsp., Ogobai river, Gaboon; id. t. c. pp. 157 & 158.
Argaleocichla n. g., Type *A. icterinus* (Bonap.); id. t. c. pp. 160 & 161.
A key to the genera treated in the above paper; id. t. c. pp. 170-172.

Family TIMELIIDÆ.

- Babax yunnanensis*, n. sp., W. Yun-nan, and *B. victoria*, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xv, pp. 96 & 97;
B. waddelli from Tsampo Valley, Tibet; DRESSER, P. Zool. Soc. London 1905, i, p. 54, pl. iv.
Argya rubiginosa and *A. aylmeri*, eggs described; ERLANGER, J. Ornith. 1905, pp. 738 & 739.
Pomatorhinus mearns, n. sp., Upper Chindwin River; GRANT, Bull. B. O. C. xv, p. 39.
Garrular tibetanus, n. sp., Tsangpo Valley, Tibet; DRESSER, P. Z. S. 1905, pp. 54 & 55, pl. v, fig. 2 [= *Trochalopteron henrici* Oust.; GRANT, Bull. B. O. C. xv, p. 94.
Crateropus cordofanicus, n. sp., Kordofan; BUTLER, Ibis 1905, p. 330, pl. vii: *C. buxtoni* Sharpe = *C. cinereus* Heugl.; REICHENOW, Vög. Afrikas iii, p. 658: *C. platycercus togoensis* Neum. = *C. platycercus* Sw.; REICHENOW, t. c. p. 660: *C. smithi* (fig. 1), *C. squamulatus* (fig. 2), *C. hypoleucus* (fig. 3), figured; id. t. c. pl. xxiv.
Phyllanthus Less. distinct from *Crateropus*; REICHENOW, t. c. p. 667.
Calamanthus albiloris, n. sp., Victoria, Australia; CAMPBELL, Emu iv, p. 122.
Pseudotharrhaleus griseipectus, n. sp., Mount Apo (6,200 feet), Mindanao, Philippine Is.; MEARNs, P. Soc. Washington xviii, pp. 2 & 3.
Macrosphenus flavicans (fig. 3) and *M. zenkeri* (Reichenow) (fig. 4) figured; REICHENOW, Vög. Afrikas iii, pl. xxii.
Turdinus albipectus figured; id. t. c. iii, pl. xxx, fig. 3: *T. batesi* Sharpe is an *Alethe*; id. t. c. p. 749.
Amaurocichla Sharpe belongs to the *Certhiidae*; id. t. c. p. 508.
A. kemp, n. sp., Sierra Leone; SHARPE, Bull. B. O. C. xv, p. 38: figured; KEMP, Ibis 1905, p. 231, pl. v.
Alcippe abyssinica, eggs described; ERLANGER, J. Ornith. 1905, p. 750: *A. stierlingi* figured; REICHENOW, Vög. Afrikas iii, pl. xxviii, fig. 1.
Parophasma, n. gen., type *P. galinieri*; id. t. c. p. 743: *P. galinieri*, habits; ERLANGER, J. Ornith. 1905, pp. 750 & 751.
Zosterornis nigrocapitatus, from Luzon; MCGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 29.
Macronus mindanensis montanus, n. subsp., Mount Apo (4000 feet), Mindanao, Philippine Is.; MEARNs, P. Soc. Washington xviii, p. 4.
Horinillas, nom. nov. pro *Malacopteron* auctt. (nec Serville); OBERHOLSER, Smithsonian. Collect. quart. xlviii, pp. 64 & 65.
Leonardina, n. gen. [nom. emend. pro *Leonardia* Mearns, P. Soc. Washington xviii, pp. 1 & 2, nec Tapparone-Canefri, 1890]. Type *L. woodi*, n. sp., Mt. Apo, Mindanao; MEARNs, P. Soc. Washington xviii, p. 88.
Myiophoneus robinsoni, n. sp., Selangor; GRANT, Bull. B. O. C. xv, p. 69: id. J. Federated States Mus. i, p. 104.
Brachypteryx mindanensis, n. sp., Mount Apo (6000 feet), Mindanao; MEARNs, P. Soc. Washington xviii, pp. 3 & 4.

- Ixops poliotis*, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xv, p. 97.
Liothrix luteus, in the London Parks; FINN, Avicult. Mag. (2) pp. 317 & 318.
Suthora ripponi, n. sp., Mt. Victoria, S. Chin Hills; SHARPE, Bull. B. O. C. xv, p. 96.
S. brunnea, nesting in Upper Burma; HARRINGTON, J. Bombay Soc. xvi, p. 740.

Family PANURIDÆ.

- Panurus biarmicus*, in confinement; ST QUINTIN, Avicult. Mag. (2) iii, pp. 149 & 150: breeding in confinement; FARRER, t. c. pp. 318 & 319.

Family TROGLODYTIDÆ.

- Heleodytes griseus*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 294.
Telmatodytes palustris in the tidal swamps of the Delaware Valley; HUNT, Cassinia 1904, pp. 14-16: *Cistothorus stellaris* in E. Pennsylvania and New Jersey; HOLMES, t. c. pp. 17-25.
Troglodytes. Ranges of South American species; HELLMAYR, Nov. Zool. xii, p. 270: *T. audax* Tschudi = *T. musculus*, juv.; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 6.
Cistothorus stellaris, in South-eastern Michigan; SWALES & TAVERNER, Auk xxii, pp. 88 & 89.
Troglodytes parvulus subpallidus, n. subsp., Mts. of N. E. Persia; SARUDNY & LOUDON, Ornith. Monber. xiii, p. 107: *T. p. hyrcanus*, n. subsp., Caspian Provinces of Persia (Ghilan, Masanderan, Asterabad); iid. t. c. pp. 107 & 108. *T. parvulus*, nesting habits; BENTHAM, Zoologist 1905, p. 107: BUTTERFIELD, t. c. pp. 140 & 141: STEELE-ELLIOTT, t. c. p. 141: ELLISON, t. c. pp. 141 & 142: WALTON, t. c. p. 179.
Anorthura tibetana, n. sp., Khamba Jong, Tibet; WALTON, Bull. B. O. C. xv, p. 93.
Henicorhina hilaris bangsi, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 293 & 294.

Family CINCLIDÆ.

- Cinclus*, geographical distribution of the species; STEJNEGER, Smithson. Collect. quart. xlvii, pp. 421-430.
C. cinclus britannicus Tschusi = *C. gularis* (Lath.); id. t. c. p. 429.
Cinclus, notes on Asiatic species; BIANCHI, Bull. B. O. C. xv, pp. 91 & 92: *C. przewalskii*, n. sp., E. Tibet; id. t. c. p. 91: *C. saturatus* Dresser, and *C. kibortii* Madar. = *C. bilkevitschi* Sarudny; id. t. c. p. 92: *C. younghusbandi*, n. sp., Khamba Jong, Tibet; WALTON, Bull. B. O. C. xv, p. 93.

Family MIMIDÆ.

- Cichlherminia coryi*, n. subsp. ? Martinique, Lesser Antilles; RIDGWAY, Smithson. Collect. quart. ii (1), p. 112.
Cinclocerthia ruficauda tenebrosa, n. subsp. St Vincent, Lesser Antilles; RIDGWAY, t. c. pp. 112 & 113: *C. ruficauda pavida*, n. subsp., St Christopher, Lesser Antilles; id. t. c. p. 113.

- Mimus gilvus guatemalensis*, n. subsp., Highlands of Guatemala; RIDGWAY, Smithson. Collect. Quart. ii (1), p. 113: *M. gilvus tolimensis*, n. subsp., Tolima, Colombia; id. t. c. p. 113.
Toxostoma rufum, wintering in New York City; LEWIS, Auk xxii, pp. 314 & 315.

Family TURDIDÆ.

Remarks on the family; PYCRAFT, Ibis 1905, pp. 1-24, pl. ii.

- Myiadestes genibarbis cherriei*, n. subsp., Haiti, W. I.; RIDGWAY, Smithson. Collect. quart. ii, p. 112.
M. elizabeth retrusus, n. subsp., Isle of Pines; BANGS & ZAPPEY, Amer. Natural. xxxix, p. 208.
Turdus roehli, n. sp., Usambara, German East Africa; REICHENOW, Ornith. Monber. xiii, p. 182: *T. merula*, peculiar variety; READ, Bull. B. O. C. xvi, p. 36: in Tunis; KOLLIBAY, Ornith. Monber. xiii, p. 141: *T. merula algerus* and its allies; WITHERBY, op. cit. xv, p. 48: id. Ibis 1905, p. 181: *T. iliacus* from the Pleistocene of Derbyshire; ARNOLD-BEMROSE & NEWTON, Quart. J. Geol. Soc. 61, p. 56.
T. merula azorensis, n. subsp.; HARTERT, Nov. Zool. xii, p. 116.
M. bouboul in confinement; BUTLER, Avicult. Mag. (2) iii, pp. 243-247: *M. kelleri*, n. sp., Mount Apo (6000 feet), Mindanao, Philippine Is.; MEARN, P. Soc. Washington xviii, pp. 6 & 7: *M. celanops yakushimensis*, n. subsp., Yakushima; OGAWA, Annot. zool. Japon. v, pp. 180-182: *M. grayi lurida* and *M. albiventris fusca*, nests and eggs described; ALLEN, Bull. Amer. Mus. xxi, pp. 294 & 295.
Oreocincla varia in Assam; MOORE, J. Bombay Soc. xvi, p. 502.
Ixoreus naevius, notes on; SILLOWAY, Condor vii, pp. 18-22: notes on the nesting; BROOKS, Auk xxii, pp. 214 & 215.
Geocichla major, n. sp., Amami-Oshima; OGAWA, Annot. zool. Japon. v, pp. 178 & 179.
G. litsitsirupa sinensis, eggs described; REICHENOW (ERLANGER), J. Ornith. 1905, p. 170: *G. camaronensis*, n. sp., Camaroon, W. Africa; SHARPE, Ibis 1905, p. 472: *G. batesi*, n. sp., Camaroon; id. Bull. B. O. C. xvi, p. 36: *G. cinerea*, notes on; MCGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 21, pl. xv.
Turdus daichleri Erlanger, notes on; KOLLIBAY, Ornith. Monber. xiii, pp. 141-143: *T. pelios centralis*, n. subsp., Lake Regions of Equatorial Africa; REICHENOW, Vög. Afrikas iii, p. 690: *T. abyssinicus* and *T. pelios*, eggs described; ERLANGER, J. Ornith. 1905, p. 741: *T. tephronotus* in S. Somali Land and Arussi Galla Land; id. t. c. pp. 742 & 743: *T. pilaris* in the Kurische Nehrung; THIENEMANN, Ornith. Monber. xiii, pp. 48 & 49: *T. atrigularis* in the Kurische Nehrung; id. t. c. p. 48: *T. torquatus* near Khartoum in December; A. L. BUTLER, Ibis 1905, p. 337: *T. alpestris*, range in Germany; BERGE, Ornith. Monber. xiii, pp. 150 & 151: *T. musicus*, curious semi-detached nests; PRATT, Bull. B. O. C. xv, p. 69.
Hypocolius referred to the *Turdinae*; REICHENOW, Vög. Afrikas iii, p. 677.
Accentor, review of the genus and a key to the species; TSCHUSI, Ornith. Jahrb. xvi, pp. 127-140: *A. collaris collaris*, male, female and young described; id. t. c. pp. 128-131: *A. c. subalpinus*, described; id. t. c. pp. 132-134: *A. c. hypanis*, n. subsp., Kuban district, Caucasus; id. t. c. pp. 135 & 136.
Tharrhaleus modularis, white eggs [with egg of Cuckoo]; LOAT, Bull. B. O. C. xv, p. 78.

- Accentor modularis*, note on the nesting; GURNEY, Zoologist 1905, p. 169.
 BUTTERFIELD, t. c. p. 236.
- Ruticilla titys* at the Flannan Islands; CLARKE, Ann. Scott. Nat. Hist. 1905, pp. 243 & 244.
- Phaniscurus familiaris falkensteini*, figured; REICHENOW, Vög. Afrikas iii, pl. xxx, fig. 1.
- Luscinia* Forster vice *Aedon* Forster; OBERHOLSER, P. U. S. Mus. xxviii, p. 895. [Cf. SCLATER, infra.]
- Lusciola gotsi* near Khartoum in September; BUTLER, Ibis 1905, p. 337.
- Philomela* Link. (1806) has precedence over *Aedon* Forster (1817) for the Nightingale; SCLATER, Bull. B. O. C. xvi, pp. 49-41.
- Daulias philomela*, remarks on its occurrence in England; HARTERT, Bull. B. O. C. xv, p. 47.
- Aedon luscinia* in Bavaria; GENGLER, Ornith. Monber. xiii, pp. 157-163.
- Erythacus rubecula*, notes on; WITHERBY, Ibis 1905, p. 184: feeding on moths; SCHUSTER, Ornith. Monber. xiii, pp. 110 & 111: in the Azores; HARTERT, Nov. Zool. xii, p. 117: *E. rubecula* (?) from the Pleistocene of Derbyshire; ARNOLD-BEMROSE & NEWTON, Quart. J. Geol. Soc. 61, p. 56: *E. cyanecula* near Hastings; TICEHURST, Bull. B. O. C. xvi, p. 34.
- Tarnier* belongs to the *Turdidae*, *T. orientalis* F. & R. = *T. cucullatus* Blyth; OBERHOLSER, P. U. S. Mus. xxviii, p. 897.
- Cossypha* has a scutellated tarsus, and should be removed from the *Turdidae*; id. t. c. p. 894: *C. gutturalis*, eggs; DRESSER, Bull. B. O. C. xv, p. 76: *C. albigularis* (fig. 2), *C. polioptera* (fig. 3), figured; REICHENOW, Vög. Afrikas iii, pl. xxviii.
- Cichladusa rufipennis* (Sharpe) = *C. guttata* (Heugl.); id. t. c. p. 766.
- Erythropygia leucoptera*, its eggs; ERLANGER, J. Ornith. 1905, pp. 754 & 755: *E. quadrivirgata erlangeri*, n. subsp., S. Somali Land; REICHENOW, Vög. Afrikas iii, p. 770: *E. brunneiceps soror*, n. subsp., E. Africa; id. t. c. p. 774.
- Cuphopterus dohrni* is an *Alethe*; id. t. c. p. 750.
- Alethe fülleborni usambaræ*, n. subsp., Usambara, German East Africa; REICHENOW, Ornith. Monber. xiii, p. 182.
- Pratincola azillaris* and *P. sybilla*, notes on; OBERHOLSER, P. U. S. Mus. xxviii, pp. 895 & 896: *P. maura* near Cley in Norfolk; SAUNDERS, Bull. B. O. C. xvi, p. 10: in N. E. Africa; ERLANGER, J. Ornith. 1905, pp. 748 & 749.
- Pinarochroa sordida erlangeri*, n. subsp., S. Somali Land, N. E. Africa; REICHENOW, Ornith. Monber. xiii, p. 25: figured; ERLANGER, J. Ornith. 1905, Taf. xx: *P. s. schoana*, n. subsp., Shoa; NEUMANN, Ornith. Monber. xiii, pp. 78 & 79: *P. s. djamdjamensis*, n. subsp., Djamdjam Mts, E. of Lake Abaya, N. E. Africa; id. t. c. p. 79: figured; REICHENOW, J. Ornith. 1905, Taf. xx.
- Oreicola jerdoni* nesting in Upper Burma; HARRINGTON, J. Bombay Soc. xvi, p. 741.
- Saxicola bifasciata* is a *Thamnolæa*; REICHENOW, Vög. Afrikas iii, p. 704: *S. ænanthe* in the Egyptian Soudan in winter (November to April); BUTLER, Ibis 1905, p. 338: *S. æ. leucorrhœa* in Cuba; ROBINSON, Auk xxii, p. 315: in the Azores; HARTERT, Nov. Zool. xii, p. 117: *S. borealis* Kleinschmidt (i.e. *S. ænanthe* Linn.), an essay on the Common Wheatear and its [supposed] allies; KLEINSCHMIDT, Berajah, Lief. i, pp. 1-22, Taf. i-ix: *S. seebohmi*, notes on; id. Falco i, pp. 30-35: *S. stapanina* in Sussex; NICOLL, Bull. B. O. C. xvi, p. 22: *S. melanoleuca*, melanism; KOLLIBAY, Ornith. Monber. xiii, p. 143: *S. stapanina melanoleuca* and *S. aurita*, notes on; PARROT, J. Ornith. 1905, pp. 628-633, 666: *S. lugens halophila*, notes on; WITHERBY, Ibis 1905, p. 182: *S. albicollis caterinae*, notes

- on; id. t. c. p. 183: *S. rostrata* H. & E., and *S. libanotica* H. & E., notes on; KLEINSCHMIDT, Ornith. Monber. xiii, pp. 165 & 166: *S. schalowi*, figured; REICHENOW, Vög. Afrikas iii, pl. xxx, fig. 2.
- Catharus fuscater sancta-marta*, n. subsp., Santa Marta, Colombia; RIDGEWAY, Smithsonian Collect. quart. ii, p. 112.
- Zeledonia coronata* is a Turdine form; PYCRAFT, Ibis 1905, pp. 1-24: figured; id. t. c. pl. i.

Family SYLVIIDÆ.

Eggs of the Warblers of Europe; DRESSER (179).

Locustella styani, n. sp., S. E. China; LA TOUCHE, Bull. B. O. C. xvi, p. 21.

Acrocephalus divisible into three sub-genera, *Acrocephalus* Naum. (type *A. turdoides*), *Muscipeta* Koch (type *M. phragmitis*), *Tatare*, Less. (type *T. otaitensis*), *Acrocephalus orinno*, nom. emend. pro *A. macro-rhynchus* Hume, nec Müller; OBERHOLSER, P. U. S. Mus. xxviii, pp. 897-901.

Notiocichla, n. gen., type *N. batioata* (Vieill.); id. t. c. pp. 900 & 901.

Anteliocichla, n. gen., type *A. bistrigiceps* (Swinh.); id. t. c. p. 901.

Acrocephalus palustris breeding in Kent; INGRAM, Bull. B. O. C. xv, p. 96: PYCRAFT, Knowledge 1905, p. 207: *A. turdoides* at Bexhill, Sussex; NICOLL, Zoologist 1905, p. 268: *A. aquaticus* in Sussex; NICOLL, Bull. B. O. C. xvi, pp. 22 & 23: in the Isle of Wight; WITHEBY, t. c. pp. 23 & 24: *A. streperus* and *A. palustris*, notes on; HARTERT, Ornith. xiii, p. 61: *A. phragmitis* at the Flannan Islands; CLARKE, Ann. Scott. Nat. Hist. 1905, p. 244.

Dybowskiia kemoensis Oust. = *Heliolais erythroptera* (Jard.); REICHENOW, Vög. Afrikas iii, p. 570.

Chatops kilimensis Madarasz = *Melocichla mentulis orientalis* Shelley; id. t. c. p. 538.

Cisticola semitorques and *C. cinerascens*, note on; ERLANGER, J. Ornith. 1905, p. 721: *C. calamoherpe*, n. sp., Kilimanjaro district, N. to Lake Abassi, etc.; REICHENOW, Vög. Afrika iii, p. 549: *C. hindei* Sharpe = *C. brunneescens* Heugl.; REICHENOW, t. c. iii, p. 559.

C. nigrifrons, n. sp., German East Africa; id. t. c. p. 560: *C. robusta massaica*, n. subsp., Masai Land (between Mt Kilimanjaro and the eastern shores of the Victoria Nyanza); NEUMANN, Ornith. Monber. xiii, pp. 77 & 78: *C. lugubris nyanse*, n. subsp., coast-region of the Victoria Nyanza; id. t. c. p. 78: *C. l. suahelica*, n. subsp., German East Africa (Usegua to Umbugwe and Uniamwesi); id. t. c. p. 78: *C. l. hamatocephala*, and *C. erlangeri*, notes on, *C. robusta*, eggs described; ERLANGER, J. Ornith. 1905, pp. 718-720: *C. l. nyanse* and *C. suahelica*; NEUMANN, Ornith. Monber. 1905, p. 78 = *C. lugubris massaica*; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 842: *C. robusta massaica* Neumann, Ornith. Monber. 1905, p. 77 = *C. robusta* (Rüpp.); id. t. c. p. 842: *C. semifasciata*, n. sp., Nyasa Land to Shoa; REICHENOW, Vög. Afrikas iii, p. 544: *C. prinioideus* and its allies; OBERHOLSER, P. U. S. Mus. xxviii, p. 902: *C. harrisoni*, n. sp., El Bolossa Swamp, Moranda-River, British E. Africa; STONE, P. Ac. Philad. 1905, p. 771: *C. argentea*, n. sp., S. Somali Land: *C. schillingi*, n. sp., E. Africa; REICHENOW, Ornith. Monber. xiii, p. 25.

Bradypterus marie, n. sp.; MADARASZ, Ann. Mus. Hungar. iii, pp. 401 & 402: *B. rufoflavus* Reichenow & Neumann = *B. barratti*; OBERHOLSER, P. U. S. Mus. xxviii, pp. 903 & 904.

Calamonastes stierlingi, figured; REICHENOW, Vög. Afrikas iii, pl. xx, fig. 3:

- C. simplex*, eggs described; ERLANGER, J. Ornith. 1905, pp. 722 & 723.
- Hypolais polyglotta*, note on; CARPEGNA, Bol. Soc. zool. Ital. (2) vi, p. 203.
- H. icterina* in the Isle of Wight; WITHERBY, Bull. B. O. C. xvi, p. 24.
- Sylvia curruca* near Berwick; BOLAM, Hist. Berwick. Club xix, p. 68: *S. orphea* in Sussex; TICEHURST, Bull. B. O. C. xvi, p. 35: *S. undata* nesting in Sussex; MORRIS, Zoologist 1905, p. 309: *S. delicatula* from S. Somali Land; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 842.
- Phylloscopus sibilatrix flavescens* = *P. sibilatrix*; WITHERBY, Ibis 1905, p. 186: *P. tristis* believed to occur in Switzerland; FATIO, Arch. Sol. Nat. (4) xx, pp. 588 & 589.
- Acanthiza modesta*, n. sp., Charleville, Interior of Queensland; DE VIS, Ann. Queensland Mus. No. 6, p. 43: *A. katherina*, n. sp., Bellenden Ker Range; id. t. c. pp. 43 & 44.
- Sericornis tyrannula*, n. sp., Charleville, Interior of Queensland; id. t. c. pp. 42 & 43.
- Oreoscopus*, n. gen., type *O. gutturalis* (De Vis); NORTH, Agric. Gaz. N. S. W. xvi, p. 247.
- Apalis griseiceps*, figured; REICHENOW, Vög. Afrikas iii, pl. xx, fig. 1: *A. thescela*, n. sp., Mt Kilimanjaro, E. Africa; OBERHOLSER, P. U. S. Mus. xxviii, pp. 904 & 905: *A. erlangeri*, n. sp., S. Somali Land; REICHENOW, Ornith. Monber. xiii, pp. 24 & 25: id. Vög. Afrikas iii, p. 602: eggs described; id. J. Ornith. 1905, p. 727: figured; Taf. xix, fig. 1: *A. chariessa* (fig. 2), *A. porphyrolæma* (fig. 3), figured; REICHENOW, Vög. Afrikas iii, pl. xxi: *A. rufifrons*, eggs described; ERLANGER, J. Ornith. 1905, p. 726: *A. melanocephala* in S. Somali Land, figured; id. t. c. p. 728, Taf. xvii: *A. malensis*, eggs described; id. t. c. pp. 729 & 730: *A. equatorialis* Neum. = *A. golzi* Neum.; REICHENOW, Vög. Afrikas iii, p. 611: *A. malensis*, n. sp. (ex Neum. MSS.), Galla Land and S. Somali Land; id. t. c. p. 612: *A. flavida malensis*, n. subsp., Male Land, N. of Lakes Rudolf and Stephanie; NEUMANN, Ornith. Monber. xiii, p. 78: *A. ansorgei*, n. sp., Angola; HARTERT, Bull. B. O. C. xv, p. 95.
- Euprinodes* generically distinct from *Apalis*; OBERHOLSER, P. U. S. Mus. xxviii, p. 908: *E. leucogaster* Sharpe = *Apalis schistacea* (Cass.); REICHENOW, Vög. Afrikas iii, p. 603.
- Sylviella toroensis*, n. sp., Kibera River, Toro; JACKSON, Bull. B. O. C. xv, p. 38.
- Sylviella erlangeri*, n. sp.; REICHENOW, Vög. Afrikas iii, p. 626: eggs described, ERLANGER, J. Ornith. 1905, p. 731: *S. rufescens ochrocaræ*, n. subsp., Damara Land; OBERHOLSER, Smithsonian. Collect. quart. xlvii, Vol. ii, pp. 373 & 374: *S. rufigenis*, figured; REICHENOW, Vög. Afrikas, pl. xxi, fig. 4: *S. major* Neum. = *S. jacksoni* Sharpe; id. t. c. p. 627.
- Eremomela flaviventris griseoflava* and *E. erlangeri*, figured; ERLANGER, J. Ornith. 1905, pp. 733 & 734, Taf. xviii: *E. flaviventris abdominalis*, n. subsp., E. Africa; REICHENOW, Vög. Afrikas iii, p. 635: *E. erlangeri*, n. sp., Garre-Liwin, N. E. Africa; id. t. c. p. 635: *E. baugarti*, n. sp., Damara Land; id. Ornith. Monber. xiii, p. 25: *E. flaviventris sharpei*, n. subsp. (= *E. damarensis* Sharpe, nec Wahlberg), Damara Land; id. t. c. pp. 25 & 26: *E. scotops* from Kidudwe, E. Africa; OBERHOLSER, P. U. S. Mus. xxviii, pp. 906 & 907: *E. congensis*, n. sp., Lower Congo; REICHENOW, Vög. Afrikas iii, p. 639: *E. citriniceps*, figured; id. t. c. pl. xxii, fig. 2.
- Camaroptera erlangeri*, n. sp., S. Somali Land; id. t. c. p. 617: *C. granti* Alex. = *C. chloronota* Reichenow; id. t. c. p. 620: *C. pileata* (fig. 3) and *C. chloronota* (fig. 4); figured, id. t. c. pl. xvii.
- Stiphrornis xanthogaster*, figured; SHARPE, Ibis 1905, p. 476, pl. ix.

- Phyllergates heterolæmus*, n. sp., Mount Apo (6700 feet), Mindanao, Philippine Is.; MEARNS, P. Soc. Washington xviii, p. 86.
- Suya superciliaris* nesting in S. E. China; LA TOUCHE & RICKETT, Ibis 1905, pp. 35 & 36.
- Prinia somalica erlangeri*, n. subsp., S. Somali Land; REICHENOW, Ornith. Monber. xiii, p. 24: id. Vög. Afrikas iii, p. 592: eggs described; id. J. Ornith. 1905, p. 725: *P. somalica* and *P. s. erlangeri*, figured; ERLANGER, t. c. Taf. xix: *P. sonitans* breeding in S. E. China; LA TOUCHE & RICKETT, Ibis 1905, p. 36: *P. melanops*, figured; REICHENOW, Vög. Afrikas iii, pl. xx, fig. 2: *P. melanocephala*, figured; id. t. c. pl. xxii, fig. 1: *P. reichenowi* (Hartl.), figured; id. t. c. pl. xxii, fig. 1.
- Malurus pulcherrimus* from Alligator River, N. Australia; HARTERT, Nov. Zool. xii, pp. 223 & 224.
- Amytornis woodwardi*, n. sp., S. Alligator River, N. Australia; id. Bull. B. O. C. xvi, pp. 30 & 31: *A. housei*, figured; CAMPBELL, Emu iv, pl. xiii, fig. 3.

Family VIREONIDÆ.

- Hylophilus frontalis* (Tschudi) is a *Chlorospingus*; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 8.
- Vireo huttoni oberholseri*, n. subsp., San Diego Co., California; BISHOP, Condor vii, pp. 142 & 143.

Family AMPELIDÆ.

- Ampelis garrulus*; supposed nesting in Worcestershire; REA, Trans. Worcester Club 1897-99: in Berkshire; PROCTOR, Bull. B. O. C. xv, p. 88: notes on; GOODWIN, Condor vii, pp. 98-100: in Utah; id. t. c. p. 52; migration in winter of 1903-04; TSCHUDI, Ornith. xiii, pp. 1-56.

Family ARTAMIDÆ.

- Artamus leucorhynchus*, nest and eggs described; MCGREGOR, Bureau Govt. Labs. Manila, No. 34, pp. 22 & 23.
- Pseudochelidon eurystomina* Hartl., figured; DUBOIS, Ann. Mus. Congo ii, p. 13, pl. viii.

Family PRIONOPIDÆ.

- Characters of the Family; OBERHOLSER, P. U. S. Mus. xxviii, p. 924.
- Colluricincla pallidirostris* = *C. brunnea* ♀; HARTERT, Nov. Zool. xii, p. 227: *C. superciliosa*, from New Guinea and Cape York; id. t. c. p. 227: *C. sibilans* = *Pinarolestes boweri*; id. t. c. p. 228: *C. woodwardi*, n. sp., Arnhem Land, N. Australia; id. t. c. p. 228: *Pinarolestes parvula* and *P. rufigaster* belong to the genus *Colluricincla*; id. t. c. p. 228.
- Prionops melanoptera*, juv., figured; ERLANGER, J. Ornith. 1905, Taf. xvi, fig. 1.
- P. cristata* and allies; NEUMANN, J. Ornith. 1905, pp. 215-220: review of species; id. t. c. pp. 218-220: *P. cristata omoensis*, n. subsp., Omo River district; id. t. c. p. 216: *P. talacoma* Smith = *P. poliocephalus* Stanley; id. t. c. p. 218.

Family LANIIDÆ.

- Oracticus quoyi tunneyi*, n. subsp., Arnhem Land, N. Australia; HARTERT, Nov. Zool. xii, p. 228: review of the allied species; id. t. c. pp. 228 & 229: *C. nigrogularis picatus*, distinct from *C. nigrogularis*; id. t. c. pp. 229 & 230.
- Gymnorhina tibicen longirostris*, n. subsp. (nec Milligan), N. W. Australia; HARTERT, Nov. Zool. xii, p. 230.
- G. leuconota*, arterial system of the brain; BEDDARD, P. Zool. Soc. London 1905, i, pp. 114-116.
- Lanius minor*, from Bosham, Sussex; GRIFFITH, Bull. B. O. C. xvi, p. 38.
- L. lama*, from Tsampo Valley, Tibet; DRESSER, Bull. B. O. C. xv, p. 38: id. P. Zool. Soc. London 1905, pt. i, p. 55, pl. v, fig. 1 [= *L. tephronotus* GRANT, Bull. B. O. C. xv, p. 94.]
- L. collurio*, habits; STEELE-ELLIOTT, Zoologist 1905, pp. 309 & 310: CORBIN, t. c. pp. 387 & 388: breeding in confinement; GÜNTHER, Avicult. Mag. (2) iii, pp. 330 & 331.
- L. raddei* (figg. 1-3), *L. rufus* (figg. 4, 7), *L. erythronotus* (figg. 5, 8), *L. cristatus* (figg. 6, 9), *L. bucephalus* (figg. 10-12), eggs, figured; DRESSER, Ibis 1905, pp. 525-527, pl. xi.
- L. nubicus*, in Kent; NICOLL, Bull. B. O. C. xvi, p. 22.
- L. phænicuroides*, in N. Somali Land; ERLANGER, J. Ornith. 1905, p. 703.
- L. ludovicianus*, in Connecticut in winter; ALLEN, Auk xxii, pp. 211 & 212.
- L. l. migrans*, observations at Ottawa; EIFRIG, Auk xxii, p. 314.
- L. arabicus*, n. sp., Amiri district, S. Arabia; GRANT, Bull. B. O. C. xv, p. 78.
- L. major*, on the Newarp Lightship, Essex Coast; WITHERBY, Bull. B. O. C. xv, p. 99.
- L. antinorii*, eggs described; ERLANGER, J. Ornith. 1905, pp. 701 & 702.
- L. excubitorius*, referred to the genus *Fiscus*; A. L. BUTLER, Ibis 1905, p. 327.
- L. uropygialis*, n. sp., is the form of *L. humeralis*, from East Africa; REICHENOW, J. Ornith. 1905, p. 560: id. Vög. Afrikas iii, Nachtrag, p. 835: *L. excubitorius intercedens*, n. subsp., Hawash to Ono River; NEUMANN, J. Ornith. 1905, p. 228 = *L. böhmi*; REICHENOW, t. c. Nachtrag, p. 835: *L. arabicus* Grant, probably = *L. buryi* Lorenz & Hellm.; id. t. c. p. 835.
- L. intercedens* and *L. böhmi*, remarks on; REICHENOW, J. Ornith. 1905, pp. 427 & 428.
- Enneactonotus collurio* var. *fuscatus*, n. subsp., E. Persia; SARUDNY, Denkschr. K. Russ. Geogr. Ges. xxxvi, p. 368 (1903). Cf. OTTO, Ornith. Monber. xiii, p. 135.
- Cephalophoneus suluensis*, n. sp., Bual, Sulu Island, Philippine Islands; MEARNS, P. Soc. Washington xviii, p. 86.
- Malacotus poliocephalus* and its races, notes on; NEUMANN, J. Ornith. 1905, pp. 225-227: *M. starki* Sel. = *M. blanchoti* (Steph.); id. t. c. p. 226: *M. blanchoti* Grant, nec Steph. = *M. catharoxanthus* Neum.; id. t. c. p. 226: range of the six forms, id. t. c. pp. 226 & 227.
- M. olivaceus schoanus* Neum. = *M. o. hypopyrrhus*; REICHENOW, J. Ornith. 1905, p. 559.
- Chlorophoneus sulfureopectus* and *C. s. suahelicus*, notes on; NEUMANN, J. Ornith. 1905, pp. 221 & 222: *C. multicolor*, in Sierra Leone; KEMP, Ibis 1905, p. 234.
- Pelicanus hilgerti*, eggs described; ERLANGER, J. Ornith. 1905, pp. 695 & 696.

- Laniarius jacksoni* Sharpe, probably = *Chlorophoneus bocagei*; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 834 : *L. aethiopicus somaliensis*, n. subsp., S. Somali Land ; id. t. c. p. 834.
- L. aethiopicus* and *L. a. ambiguus*, notes on ; NEUMANN, J. Ornith. 1905, pp. 222 & 223.
- L. erlangeri*, n. sp., S. Somali Land ; REICHENOW, Vög. Afrikas iii, p. 834 : id. J. Ornith. 1905, p. 697.
- Dryocopus malskii erythraea* and allied forms ; NEUMANN, J. Ornith. 1905, pp. 223-225.
- D. pringlei*, in S. Somali Land ; ERLANGER, J. Ornith. 1905, p. 699.
- Nicator gularis* from S. Somali Land ; ERLANGER, J. Ornith. 1905, p. 695.
- Pomatorhynchus blanfordi* Sharpe = *P. senegalus habessinicus* (H. & E.) ; NEUMANN, J. Ornith. 1905, p. 220.
- P. blanfordi* and *P. jamei*, eggs described ; ERLANGER, J. Ornith. 1905, pp. 692, 695.
- Pachycephala mestoni*, n. sp., ♀, Bellenden Ker Range ; DE VIS, Ann. Queensland Mus. No. 6, pp. 44 & 45.
- Hyloterpe apoensis*, n. sp., Mount Apo (6000 feet), Mindanao, Philippine Is. ; MEARNs, P. Soc. Washington xviii, pp. 86 & 87.
- Hypocolius* referred to the *Turdidae* ; REICHENOW, Vög. Afrikas iii, p. 677.

Family PARIDÆ.

See HARTERT, Vög. pal. Fauna, Heft. iii, pp. 339-384.

- Parus salicarius*, in England ; HARTERT, Ornith. xiii, pp. 60 & 61.
- P. s. rhenanus*, figured ; KLEINSCHMIDT, C.R. vii Congr. Zool. 1905, pl. to p. 144.
- P. hudsonicus*, breeding at Dover, Maine ; RITCHIE, Auk xxii, pp. 85-87 : occurrence near Boston, Mass. ; WRIGHT, t. c. p. 87.
- P. montanus*, its rufous nasal plumes ; INGRAM, Bull. B. O. C. xv, p. 96.
- P. lugubris anatolicæ*, n. subsp., Asia Minor ; HARTERT, Vög. pal. Fauna, heft. iii, p. 368.
- Pæcile lugubris hyrcanus*, n. subsp., W. Persia ; SARUDNY & LOUDON, Ornith. Monber. xiii, p. 76.
- Parus ater schwederi*, n. subsp., Samhof, Livonia ; LOUDON & TSCHUSI, Ornith. Jahrb. xvi, pp. 140 & 141.
- Pardaliparus elegans mindanensis*, n. subsp., Mount Apo (6,200 feet), Mindanao, Philippine Is. ; MEARNs, P. Soc. Washington xviii, p. 8.
- Parus major* and allies, notes on ; HARTERT, Ornith. xiii, pp. 59 & 60 : MARTORELLI, Avicula ix, pp. 86 & 87 ; HARTERT, Nov. Zool. xii, pp. 497-500 : *P. m. sayrossiensis* Sarudny & Loudon = *P. blanfordi*, *P. major caspius* probably also = *P. blanfordi*, *P. major caschmiriensis*, n. subsp., Cashmere ; id. t. c. p. 498 : *P. major planorum*, n. subsp., Plains of N. India ; id. t. c. p. 499 : *P. m. mahrattarum*, n. subsp., S. Indian Peninsula and Ceylon ; id. t. c. p. 499 : *P. m. hainanus*, n. subsp., Hainan ; id. t. c. p. 499 : *P. m. okinawæ*, n. subsp., Riu Kiu Id. ; id. t. c. p. 500 : *P. m. tibetanus*, n. subsp., Tibet ; id. t. c. p. 500 : *P. m. minor*, remarks on ; id. t. c. p. 500.
- P. major peloponnesius*, n. subsp., Greece ; PARROT, J. Ornith. 1905, pp. 547-550, 665.
- P. major sayrossiensis*, n. subsp., Sagrosch Mts., S. W. Persia ; SARUDNY & LOUDON, Ornith. Monber. xiii, pp. 108 & 109 : *P. m. caspius*, n. subsp., Caspian Provinces of Persia (Ghilan, Masanderan, Asterabad) ; iid. l. c.
- P. major blanfordi* Praszak (Ornith. Jahrb. 1895, p. 240) = *P. transcaspicus*

- Sarudny (Bull. Soc. Imp. Moscou, 1893); SARUDNY, Ornith. Monber. xiii, p. 109, note.
- P. bocharensis* Licht., not closely allied to *P. cinereus* Vieill., which is nearer to *P. transcaspicus* and *P. major*; SARUDNY & LOUDON, Ornith. Monber. xiii, p. 109, note.
- P. bocharensis turkestanicus*, n. subsp., C. Asia (Dsungaria, Semiratschja, and Syr Darya districts); iid. t. c. p. 109.
- P. caeruleus*, curious variety in Holland; SNOUCKAERT VAN SCHAUDE, Ornith. Monber. xiii, pp. 75 & 76.
- P. c. ogliastræ*, n. subsp., Sardinia and Corsica; HARTERT, Vög. pal. Fauna, heft. iii, p. 349.
- Cyanistes caeruleus orientalis*, n. subsp., E. Russia (Govts. of Orenburg, Ufa, Samara, Kazan, Simbirsk); SARUDNY & LOUDON, Ornith. Monber. xiii, pp. 105 & 106.
- C. berezowskii*, figured; BIANCHI, Wiss. Res. Przew. Reis. Vög. ii, pl. vii, figg. 3 & 4.
- Parus cyaneus*, figured; HERBERT, Tr. Edinb. Field Soc. v, pp. 194-196, pl. xix.
- P. niger lacuum*, n. subsp., Lake Region, S. of the Omo River, N. E. Africa; NEUMANN, Ornith. Monber. xiii, p. 77.
- Acredula calva*, figured; BIANCHI, Wiss. Res. Przew. Reis. Vög. ii, pl. vii, figg. 1 & 2.
- A. caudata*, nesting in Hungary; LINTIA, Aquila xii, pp. 335-337.
- Psaltriparus minimus*, nesting habits; FINLEY, Condor vii, pp. 91-95 cum tab.
- Egithalus caudatus* and *A. roseus*, near Leipzig; HESSE, Ornith. Monber. xiii, pp. 127 & 128.
- Æ. stoliczkae*, figured; BIANCHI, Wiss. Res. Przew. Reis. Vög. ii, pl. x, figg. 1 & 2.
- Anthoscopus ansorgei*, n. sp., Benguela; HARTERT, Bull. B. O. C. xv, pp. 74 & 75: *A. sharpei*, n. sp., Usambiro, S. of Victoria Nyanza; id. t. c. p. 75.
- A. minutus* and its allies; REICHENOW, Vög. Afrikas iii, p. 526: *A. m. levaillanti*, n. subsp., Cape Colony, *A. m. damarensis*, n. subsp., Damara Land; id. t. c. p. 526.
- Pholidornis* and *Parmoptila*, referred to the *Paridae*; REICHENOW, Vög. Afrikas iii, p. 529.
- Xerophila castaneiventris*, figured; CAMPBELL, Emu iv, pl. xiii, fig. 1.
- Apatema*, n. gen., type *A. olivascens* (Cassin); REICHENOW, Vög. Afrikas iii, p. 523.

Family REGULIDÆ.

- Distribution in Italy; RONNA, Avicula ix, pp. 65-71. Cf. DRESSER, eggs of the birds of Europe (179).
- Regulus regulus anglorum*, n. subsp., British Islands; HARTERT, Bull. B. O. C. xvi, p. 11.

Family CETHIIDÆ.

See HARTERT, Vög. pal. Fauna, Heft. iii, 1905, pp. 316-328.

- Amaurocichla Sharpe*, is a Creeper; REICHENOW, Vög. Afrikas iii, p. 508.
- Certhia familiaris corsa*, n. subsp., Corsica; HARTERT, Vög. pal. Fauna, heft. iii, p. 320: *C. f. bianchii*, n. subsp., Mts. of Kansu and N. Szechuen; id. t. c. p. 321: *C. f. tianschanica*, n. subsp., Tianshan; id. t. c. p. 321: *C. brachydactyla ultramontana*, n. subsp., N. Mediterranean countries; id. t. c. p. 324.

- C. familiaris persica*, n. subsp., Caspian Provinces of Persia (Ghilan, Masanderam, Asterabad); SARUDNY & LOUDON, Ornith. Monber. xiii, pp. 106 & 107.
- C. brachydactyla mauritanica*, n. subsp., Algeria and Tunis; WITHERBY, Bull. B. O. C. xv, pp. 35 & 36.
- C. familiaris* and *C. brachydactyla*, notes on; HARTERT, Ornith. xiii, pp. 58 & 59.
- C. familiaris americana*, observations on the nesting habits; CHADBOURNE, Auk xxii, pp. 179-183, pls. vi-ix; KENNARD & McKECHNIE, t. c. pp. 183-193, pls. x-xii.

Family SITTIDÆ.

- Sitta europæa* and its allied forms; PARROT, Ornith. Jahrb. xvi, pp. 113-127.
- S. e. levantina*, n. subsp., Asia Minor to Palestine; HARTERT, Vög. pal. Fauna, heft. iii, p. 333.
- S. e. rubiginosa*, TSCHUDI & SARUDNY, Ornith. Jahrb. xvi, p. 140.
- S. syriaca obscura*, n. subsp., W. Persia; SARUDNY & LOUDON, Ornith. Monber. xiii, p. 76: *S. syriaca* is a distinct species from *S. neumayeri*; iid. t. c. p. 76, note.
- S. frontalis palawana*, n. subsp., Palawan and Balabac Is.; HARTERT, Bull. B. O. C. xvi, pp. 11 & 12.

Family ZOSTEROPIDÆ.

- Zosterops lateralis*, from Norfolk Island; NORTH, Rec. Austral. Mus. v, p. 338.
- Z. palpebrosa alani*, n. subsp., S. Dionisio, Volcano Islands; HARTERT, Bull. B. O. C. xv, p. 45.
- Z. japonica insularis*, n. subsp., Tanegashima and Yukushima; OGAWA, Annot. zool. Japon. v, pp. 186-190.
- Z. superciliosa* Reichenow from Lake Dilolo, Upper Congo; DUBOIS, Ann. Mus. Congo i, pp. 16 & 17.
- Z. wittkowi*, n. sp., Europa Island, near Madagascar; REICHENOW, Ornith. Monber. xiii, p. 180.
- Z. deserticola*, n. sp., Great Namaqua Land; REICHENOW, Vög. Afrikas iii, p. 433.

Family DICAËIDÆ.

- Dicaeum sibuyanicum*, young bird described; MCGREGOR, Bureau Govt. Laba. Manila, No. 25, p. 18.
- D. davao*, n. sp., Rio Grande, S. Mindanao; MEARNS, P. Soc. Washington xviii, p. 87.

Family NECTARINIIDÆ.

- Æthopyga boltoni*, n. sp., Mt. Apo, Mindanao; id. t. c. p. 5.
- Æthopyga rubrinota*, n. sp., Lubang Is., Philippines; MCGREGOR, Bureau Govt. Laba. Manila, No. 25, pp. 30 & 31.
- Nectarinia erlangeri*, n. sp., S. Somali Land; REICHENOW, Vög. Afrikas iii, p. 496.
- N. kilimensis* is a *Drepanorhynchus*; OBERHOLSER, P. U. S. Mus. xiviii, p. 931.
- Heliosympha*, n. gen., type *H. nectarinioides* (Richmond); OBERHOLSER, P. U. S. Mus. xxviii, p. 929.
- Cinnyris chalcomelas*, n. sp., S. Somali Land (Kismayu); REICHENOW, Vög. Afrikas iii, p. 482.

- C. decorsei*, n. sp., Chari, Lake Chad ; OUSTALET, Bull. Mus. Paris 1904, p. 536.
C. veltkowi, n. sp., Mayotte ; REICHENOW, Ornith. Monber. xiii, p. 181.
C. pemba, n. sp., Pemba Is., E. Africa ; id. t. c. p. 180.
Cyrtostomus dinagatensis, n. sp., Island of Dinagat, Philippine Is ; MEARNs, P. Soc. Washington xviii, pp. 5 & 6.
Chalcomitra oritis, figured ; REICHENOW, Vög. Afrikas, pl. xvii, fig. 1 : *C. borgaerti*, n. sp., E. Usambara Hills, German East Africa ; id. Ornith. Monber. xiii, p. 182.
Cinnyris olivacea ragazzii, distinct from *C. olivacea* ; OBERHOLSER, P. U. S. Mus. xxviii, p. 927.
Anabathmis, n. gen., type *A. thomensis* (Bocage) ; REICHENOW, Vög. Afrikas iii, p. 467.
Anthreptes rubritorques, n. sp., Usambara, German East Africa ; id. Ornith. Monber. xiii, p. 181.
A. cagayanensis, n. sp., Island of Cagayan Sulu, Philippine Is. ; MEARNs, P. Soc. Washington xviii, p. 6.
A. gabonicus, figured ; REICHENOW, Vög. Afrikas iii, pl. xvii, fig. 2.
A. orientalis = *A. longuemarii* ; id. t. c. p. 446.

Family MELIPHAGIDÆ.

- Myzomela obscura grisea*, n. subsp., N. Territory of South Australia ; HARTERT, Nov. Zool. xii, p. 235.
Meliphreptes magnirostris, n. sp., Kangaroo Island, South Australia ; NORTH, Rec. Austral. Mus. vi, pp. 20 & 21, pl. v, figg. 1 & 2.
M. brevirostris, note on ; id. t. c. p. 338.
Ptilotis fasciocularis, eggs described ; CAMPBELL, Emu iv, p. 137.
P. vernalis, nest and eggs described ; NORTH, Victorian Natural. xxi, pp. 167 & 168 : notes on ; id. Rec. Austral. Mus. vi, pp. 29 & 30, pl. v, fig. 3.
Philemon citreogularis sordidus distinct from *P. citreogularis* ; HARTERT, Nov. Zool. xii, p. 232.
Entomyza cyanotis and its allies ; id. t. c. pp. 232 & 233.

Family DREPANIDIDÆ.

- Chlorodrepanis chloris* and *C. virens*, nesting habits ; BRYAN, Occ. Pap. Honolulu Mus. ii, pp. 46-52.
Oreomystis maculata, nest and eggs described ; id. t. c. pp. 48 & 49, fig. 3.
Himatione sanguinea, note on ; id. t. c. p. 46.
Loxioides bailliewi, nest and eggs described ; NEHRKORN, J. Ornith. 1905, pp. 419 & 420 : BRYAN, Pap. B. P. Bishop Mus. ii, pp. 59 & 60 cum fig.
Ptilinopus ptilinopus deppii, nom. nov., vice *P. ptilinopus olivacea* Rothschild, nec Ranzani ; ROTHSCHILD, Bull. B. O. C. xv, p. 45.
Heterorhynchus wilsoni, nest and eggs described ; BRYAN, Occ. Pap. Honolulu Mus. ii, pp. 61 & 62 cum fig.

Family MNIOTILTIDÆ.

- Migration in South-east Louisiana and Southern Mississippi ; KOPMAN, Auk xxii, pp. 289-296 : the winter ranges ; COOKE, t. c. pp. 296-299.
 See THAYER (1885).
Vermivora, Swains. vice *Helminthophila* Ridgw. ; OBERHOLSER, Smithsonian Collect. quart. xlvi, pp. 66 & 67.

- Helminthophila celata*, winter resident in South Carolina; WAYNE, Auk xxii, p. 417.
- H. leucobronchialis*, at Englewood, New Jersey; HIX, Auk xxii, pp. 417 & 418.
- H. leucobronchialis* and *H. lawrencei*, status of; BISHOP, Auk xxii, pp. 21-24.
- H. bachmanii*, notes on the breeding and a description of the first plumage of the young bird; BREWSTER, Auk xxii, pp. 392-394.
- Vermivora celata*, notes on the species and its forms; OBERHOLSER, Auk xxii, pp. 242-247.
- V. celata orestera*, n. subsp., Willis, New Mexico; id. t. c. pp. 243 & 244.
- Compothlypis americanus usneæ*, in Wayne Co., Michigan; SWALES, Auk xxii, pp. 84 & 85.
- Dendroica æstiva*, supposed occurrence in Grenada, West Indies; CLARK, Auk xxii, pp. 212-214: in Durham; BIDWELL, Bull. B. O. C. xv, p. 46: GRACE, t. c. pp. 46 & 47.
- D. townsendi*, distribution in California during migration; GRINNELL, Condor vii, pp. 52 & 53.
- D. auduboni* and *D. coronata* figured; COOKE, Bird Lore viii, pl. i.
- D. a. nigrifrons*, in Southern California; WAYNE, Auk xxii, p. 419.
- D. coronata*, at Cape Elizabeth, Maine, in January; BROWNSON, Auk xxii, p. 418.
- D. kirilandi*, its range; TAVERNER, Ont. Nat. Sci. Bull. i, pp. 13-17: near Richmond, Indiana; DENNIS, Auk xxii, p. 314.
- Seiurus motacilla*, at Philadelphia in summer; ROGERS, Auk xxii, p. 419.
- S. noveboracensis*, nesting at Lancaster, Massachusetts; THAYER, Auk xxii, pp. 418 & 419.
- Setophaga ruticilla*, resident in Dominica, West Indies; CLARK, Auk xxii, p. 419.
- S. chrysogaster* Tschudi and *Basileuterus diachlorus* Cab. = *Basileuterus bivitatus chrysogaster*; BERLEPSCH & HELLMAYER, J. Ornith. 1905, pp. 6 & 7.
- Basileuterus*, notes on species and on Tschudi's types; iid. l. c.
- Myiodioctes tristriatus* Tschudi is a *Basileuterus*; iid. t. c. p. 7.
- Wilsonia mitrata*, at Falmouth in Maine; BROWNSON, Auk xxii, p. 85.

Family MOTACILLIDÆ.

- See HARTERT, Vög. pal. Fauna, Heft. iii, 1905, pp. 263-310.
- Motacilla alba* and its allies; HARTERT, Vög. pal. Fauna, Heft. iii, pp. 301-309.
- M. lugubris*, nesting in a hedge; READ, Zoologist 1905, p. 33.
- M. subpersonata* a form of *M. alba* rather than *M. personata*; HARTERT, Ibis 1905, pp. 98-101.
- M. flava* and its allies; HARTERT, Vög. pal. Fauna, heft. iii, pp. 287-296: *M. boarula* and its allies; id. t. c. pp. 298-301.
- M. flava similima*, n. subsp., Kamtschatka; id. t. c. p. 289.
- M. ruii* and *M. melanope* in confinement; BUTLER, Avicult. Mag. (2) iii, pp. 271-274.
- Budytes leucocephala* figured; BIANCHI, Wiss. Res. Przew. Reis. Vög. ii, pl. x, figg. 3 & 4.
- Agrodroma godlewskii* Tacz. = *Anthus richardi striolatus* Blyth; HARTERT, Vög. pal. Fauna, heft. iii, p. 266.
- Anthus epipoletta*, at Eastbourne; ARNOLD, Zoologist 1905, p. 142.
- A. anadyrensis*, n. sp., River Gichiga, N. E. Siberia; ALLEN, Bull. Amer. Mus. xxi, p. 254.

- A. leucophrys captus*, n. subsp., Palestine to Persia and N. W. India; HARTERT, Vög. pal. Fauna, pp. 269 & 270: *A. berthelotii madeirensis*, n. subsp., Madeira; id. t. c. p. 271: *A. spinoletta kleinschmidti*, n. subsp., Faroe Islands; id. t. c. p. 284.
- A. nicholsoni longirostris*, n. subsp., Gandjule Lake, N. E. Africa; NEUMANN, Ornith. Monber. xiii, p. 77 = *A. nicholsoni*; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 839.
- Anthus nivescens*, n. sp., Kismayu, Somali Land; REICHENOW, Ornith. Monber. xiii, p. 179.
- A. richardi* and *A. infuscatus* in S. E. China; LA TOUCHE & RICKETT, Ibis 1905, pp. 46-48.
- Macronyx*, notes on East African species of the genus: *M. sharpei* figured; JACKSON, Ibis 1905, pp. 101-104, pl. iii.
- Tmetothylacus tenellus* Cab., its habits; id. t. c. p. 194.

Family ALAUDIDÆ.

See HARTERT, Vög. pal. Fauna, Heft. iii, 1905, pp. 241-263.

- Certhilauda somalica*, figured; WITHERBY, Ibis 1905, p. 512, pl. x.
- Alaemon alaudipes* and its allies; HARTERT, Vög. pal. Fauna, Heft. iii, pp. 250 & 251.
- A. hamertoni*, n. sp., E. Somali Land; WITHERBY, Ibis 1905, p. 513: *A. h. altera*, n. subsp., Wasangali Country, Somali Land; id. t. c. p. 514.
- Eremophila alpestris* and its allies; HARTERT, Vög. pal. Fauna, Heft. iii, pp. 255-263.
- Otocoris alpestris praticola*, on Mount Washington, N. H.; TORREY, Auk xxii, pp. 414 & 415.
- O. brandti montana*, n. subsp., Western Tian-shan; BIANCHI, Wiss. Res. Przew. Reis. Vög. ii, pp. 227-231: *O. b. przewalskii*, n. subsp., Southwest Zaidam; id. t. c. pp. 231-236: *O. elwesi khamensis*, n. subsp., Tibet; id. t. c. pp. 249-251.
- Calendula dunni* Shelley is a *Galerida*; REICHENOW, Vög. Afrikas iii, p. 840.
- Mirafrja javanica* and its Australian allies; HARTERT, Nov. Zool. xii, p. 237: *M. woodwardi*, figured; CAMPBELL, Emu iv, pl. xiii, fig. 2: *M. collaris*, E. Somali Land; WITHERBY, Ibis 1905, p. 511.
- Alauda galerita* and *A. theckla* in Algeria; KLEINSCHMIDT, Falco i, pp. 85-90.
- Galerida*, notes on Palearctic species; HARTERT, Nov. Zool. xii, pp. 502 & 503.
- G. theckla superflua*, notes on; WHITAKER, Ibis 1905, pp. 195 & 196.
- G. cristata*, note on the species near St Petersburg; BIANCHI, Annuaire Mus. St Petersb. ix, p. xxxviii.
- G. c. meridionalis*, in Greece; PARROT, J. Ornith. 1905, pp. 640-643.
- G. c. carthaginiensis*, nom. n. pro *G. c. macrorhyncha* Erl. (nec Tristr.), Tunis; KLEINSCHMIDT & HILGERT, Ornith. Monber. xiii, p. 188: *G. cristata gafsae*, n. sp., Tunis (*G. c. arenicola* Erl. nec Tristr.); iid. t. c. p. 189.
- Galerida*, review of North African species; iid. t. c. pp. 189 & 190.
- Alauda*, notes on Palearctic species; HARTERT, Nov. Zool. xii, p. 501.
- A. burtoni*, n. sp., Gichiga River, N. E. Siberia; ALLEN, Bull. Amer. Mus. xxi, p. 247.
- A. arvensis* and its allies; HARTERT, Vög. pal. Fauna, Heft. iii, pp. 244-250.
- Ammomanes*, review of the genus; BIANCHI, Bull. Ac. St. Petersb. xxi, pp. 231-246 (Russian); Cf. OTTO, J. Ornith. 1905, pp. 601-618.

- Pseudammomanes*, n. subgen., Type *Ps. ferruginea* (Smith); BIANCHI, t. c. p. 241.
Ammomanopsis, n. subgen., Type *A. grayi* (Wahlb.); id. t. c. p. 241.
Ammomanoides, n. subgen., Type *A. phanicroides* (Blyth); id. t. c. p. 241.
A. samharensis distinct from *A. assabensis*; HARTERT, Nov. Zool. xii, p. 302.
Spizocorys obbiensis, n. sp., Obbia, E. Somali Land; WITHERBY, Ibis 1905, pp. 514 & 515.
Lullula arborea and its allies; HARTERT, Vög. pal. Fauna, Heft. iii, pp. 241-243.
Pyrhulauda butleri Shelley, notes on; BUTLER, Ibis 1905, pp. 311-314.
P. leucotis and *P. melanocephala*, notes on; id. l. c.

Family FRINGILLIDÆ.

- Chloris chloris* in Greece: *C. c. aurantiiventris*, notes on; PARROT, J. Ornith. 1905, pp. 647.
Coccothraustes coccothraustes, note on the species near St. Petersburg; BIANCHI, Annuaire Mus. St Petersburg. ix, p. xxxiii.
C. vulgaris, structure of skull; PYCRAFT, Bull. B. O. C. xv, pp. 37 & 38.
C. v. burvri Cab. from Algeria, is a distinct form of Hawfinch; WITHERBY, Bull. B. O. C. xv, p. 37: primaries figured; id. Ibis 1905, pp. 192 & 193, text-fig. 15.
Oryzoborus fringilloides Pelz. is a *Dolospingus*; BERLEPSCH & HELLMAYR, J. Ornith. 1906, pp. 23 & 24.
Spermophila albigularis, nesting in captivity; FARRAR, Avicult. Mag. (2) iii, pp. 358-362.
Cardinalis cardinalis, wintering in Concord, Mass.; HOWE, Auk xxii, p. 211.
Fringilla cælebs africanus, notes on; WITHERBY, Ibis 1905, p. 194.
F. montifringilla near Cologne on the 19th of June, 1905; REICHENOW, Ornith. Monber. xiii, p. 149.
F. teydeu polatzeki, n. subsp., Gran Canaria Isl.; HARTERT, Ornith. Monber. xiii, p. 164.
Procarduelis nipalensis, in the Shan States, Burma; COMBER, J. Bombay Soc. xvi, p. 739.
Carduelis carduelis and its allied forms, that from Greece being probably undescribed; PARROT, J. Ornith. 1905, pp. 653-657.
C. elegans, on Norfolk Island; NORTH, Rec. Austral. Mus. v, p. 338.
C. elegans and *Ligurinus chloris*, notes on; FRIEDRICH, Arch. Ver. Mecklenburg lviii, pp. 156-162.
Spinus citrinelloides and its allies; NEUMANN, J. Ornith. 1905, pp. 354-358: *S. c. kikuyuensis*, n. subsp., Kikuyu, Mt. Kenya, Naivascha Lake; id. t. c. p. 356.
S. pinus, breeding at Guelph, Ontario; KLUGH, Auk xxii, p. 415.
Linota rufostrigata, n. sp., Tibet; WALTON, Bull. B. O. C. xv, p. 90.
Cannabina rufescens nesting in Berkshire; PROCTOR, Bull. B. O. C. xv, p. 88: in Kent; MEADE-WALDO, t. c. p. 88.
Acanthis hornemanni exilipes, in Montana; CAMERON, Auk xxii, p. 313.
Montifringilla nivalis in Sussex; NICOLL, Bull. B. O. C. xv, p. 58.
Petronia petronia algeriensis, n. subsp., Algeria; KOLLIBAY, Ornith. Monber. xiii, pp. 23 & 24.
Passer montanus var. *pallidus*, n. subsp., E. Persia; SARUDNY, Denkschr. K. Russ. Geogr. Ges. xxxvi, p. 262: (1903), cf. OTTO, Ornith. Monber. xiii, p. 135.
Passer domesticus, at Tucson, Arizona; BRENNINGER, Auk xxii, p. 417:

- T. ornata*, figured; BUTLER, Avicult. Mag. (2) iii, pl. to p. 179.
Spindalis preteirpinus, n. subsp., Isle of Pines; BANGS & ZAPPEY, Amer. Natural. xxxix, pp. 213 & 214.
Rhamphocelus dimidiatus, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 292.
Phanicothraupis rubica confinis, n. subsp., Yaruca, Honduras; BANGS, P. Soc. Washington xviii, p. 156.
Nemosia fosteri, n. sp., Paraguay; SHARPE, Bull. B. O. C. xv, p. 96.
Chlorospingus oleaginus Scl. = *C. frontalis* (Tschudi); BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 9 & 10: *C. f. ignobilis* Scl. from Venezuela is distinct; iid. t. c. p. 9.
Saltator olivaceus, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, pp. 291 & 292.
Arremonops conirostris caneus, nest and eggs described; id. t. c. p. 291.

Family PLOCEIDÆ.

- SHELLEY, G. E. The Birds of Africa, Vol. iv, Part I. London, 1905;
Coliuspasser soror, figured; t. c. pl. xxix, fig. 2: *Urobrachya axillaris*, var. *U. affinis*, figured; id. t. c. pl. xxx, fig. 2: *U. zanzibarica* (fig. 1) and *U. affinis* (fig. 2), figured; id. t. c. pl. xxx.
Pyromelana ladoensis, figured; id. t. c. pl. xxix, fig. 1.
Coliuspasser dubiosus, n. sp., Gelo River; NEUMANN, J. Ornith. 1905, p. 348.
Pyromelana, notes on the South African species; DUNCAN, Journ. S. Afr. Orn. Union i, pp. 57-61.
P. flammiceps petiti is distinct from *P. flammiceps*; NEUMANN, J. Ornith. 1905, p. 344: *P. f. sylvatica*, n. subsp., Camaroons to Angola; id. t. c. p. 345.
P. franciscana pusilla in Harrar and Danakil Land; id. t. c. pp. 345 & 346.
P. franciscana breeding in confinement; PHILLIPPS, Avicult. Mag. (2) iii, pp. 89-94.
Euplectes capensis xanthomelas and its allies, notes on; NEUMANN, J. Ornith. 1905, p. 346.
Philaterus cabanisi euchorus Oberh. = *Pseudonigritu cabanisi* (F. & R.); REICHENOW, Vög. Afrikas iii, p. 839.
Plocepasser pectoralis, figured; SHELLEY, B. Africa iv, pl. xxxvii, fig. 1.
Pyrenestes coccineus, its habits; KEMP, Ibis 1905, p. 239: *P. minor*, figured; SHELLEY, t. c. pl. xxxv, fig. 2.
Cryptospiza jacksoni (fig. 2), *C. shelleyi* (fig. 3), figured; SHELLEY, t. c. pl. xxxv.
Quelea cardinalis from the Zambesi; W. L. SCLATER, Ann. S. Afr. Mus. iii, p. 370.
Pseudospermestes, n. gen.; DUBOIS, Ann. Mus. Congo i, p. 16; type *P. goossensii*, n. sp., Stanley Pool, R. Congo; id. t. c. p. 16.
Lagonosticta cinereovinacea, figured; SHELLEY, B. Africa iv, pl. xxxiii, fig. 3: *L. rhodopareia*, figured; id. t. c. pl. xxxiv, fig. 1.
Lagonosticta senegalata brunneiceps and its allies; NEUMANN, J. Ornith. 1905, p. 349: *L. s. erythrea*, n. subsp., Bogos Land, *L. s. abayensis*, n. subsp., Lake Abaya; id. t. c. p. 349.
L. niveiguttata, figured; SETH-SMITH, Avicult. Mag. (2) iii, pl. to p. 119.
L. polionota in Sierra Leone; KEMP, Ibis 1905, pp. 244 & 245.
Amadina fasciata from Buluwayo; SCLATER, Ibis 1905, p. 112: in Zambesia and Rhodesia; W. L. SCLATER, Ann. S. Afr. Mus. iii, p. 370.
Ptyelia citorior, figured; SHELLEY, B. Africa iv, pl. xxxiv, fig. 2.

- Chlorestilda*, n. gen.; id. t. c. p. 177.
- Neisina dufrenoyi nyansa*, n. subsp., Victoria Nyanza; NEUMANN, J. Ornith. 1905, pp. 50.
- Coccyopygia bocagei*, ♂ ♀ figured; SHELLEY, B. Africa iv, pl. xxx, figg. 1 & 2.
- Munia flaviprymna*, figured; SETH-SMITH, Avicult. Mag. (2) iii, pl. to p. 215.
- M. pectoralis*, nesting in captivity; WILLIAMS, t. c. iv, pp. 68-70.
- Poephila neglecta*, n. sp., Queensland; NORTH, Rec. Austral. Mus. v, pp. 263 & 264.
- Estrilda occidentalis* in Sierra Leone; KEMP, Ibis 1905, pp. 243 & 244.
- E. stictoptera*, n. sp., Mayotte Island; REICHENOW, Ornith. Monber. xiii, p. 180: *E. rhodopyga* (fig. 1) and *E. vinacea* (figg. 2 & 3), figured; SHELLEY, B. Africa, iv, pl. xxxii.
- Uraeginthus bengalus schoanus*, n. subsp., Shoa; NEUMANN, J. Ornith. 1905, pp. 350 & 351: *U. bengalus perpallidus*, n. subsp., Kaka, White Nile; id. t. c. p. 351.
- Sporopipes squamifrons damarensis*, n. subsp., S. W. Africa; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 838.
- Notiospiza*, nom. nov. pro *Sharpia* Bocage nec Tournier; OBERHOLSER, Smithsonian. Collect. quart. Vol. 48, p. 64.
- Anaplectes blundelli* (fig. 2) and *A. erythrogenis* (fig. 3), figured; SHELLEY, B. Africa iv, pl. xxxvii.
- Xanthophilus temporalis*, figured; id. t. c. pl. xli, fig. 1: *X. holoxanthus*, figured; id. t. c. pl. xlii, fig. 1: *X. princeps*, figured; id. t. c. pl. xlii, fig. 2.
- Sitagra aliena*, figured; id. t. c. pl. xxxix, fig. 2.
- Ploceus ocularius abayensis*, n. subsp., Gudji, E. of Lake Abaya; NEUMANN, J. Ornith. 1905, p. 339: *P. o. suahelicus*, n. subsp., Usumbara; id. t. c. pp. 339 & 340: range of the species; id. t. c. p. 340.
- Sycorotus stictifrons*, figured; SHELLEY, B. Africa iv, pl. xxxix, fig. 1.
- Pachyphantes superciliosus*, notes on, description of the female; DUBOIS, Ann. Mus. Congo i, p. 15.
- P. s. omoensis*, n. subsp., Omo River district; NEUMANN, J. Ornith. 1905, p. 343: notes on allied species; id. t. c. p. 342.
- Hyphantornis nigriceps* (fig. 1) and *H. spekei* (fig. 2), figured; SHELLEY, B. Africa iv, pl. xl: *H. nyasa*, figured; id. t. c. pl. xli, fig. 1: *Hyphantornis*. Key to South African species; W. L. SCLATER, Ann. S. Afr. Mus. iii, p. 367.
- Ploceus trotha*, n. sp., Damara Land; REICHENOW, Ornith. Monber. xiii, p. 147.
- P. stuhlmanni uhehensis* a distinct race of *P. stuhlmanni*; NEUMANN, J. Ornith. 1905, p. 338.
- P. nigricollis* and its allies, *P. n. melanoxanthus* and *P. n. malensis*, notes on; id. t. c. pp. 338, 339. The latter = *P. melanoxanthus*, REICHENOW, Vög. Afrikas iii, p. 838.
- Cinnamopteryx tricolor*, ad. et juv., figured; SHELLEY, B. Africa iv, pl. xxxviii.
- Melanopteryx albinucha* in Sierra Leone; KEMP, Ibis 1905, p. 241.
- M. weynsi* Dubois, figured; DUBOIS, Ann. Mus. Congo i, p. 14, pl. ix.
- Spermospiza haematina* in Sierra Leone has white eyelids; KEMP, Ibis 1905, p. 245.
- Anomalopteryx imberbis*, figured; SHELLEY, B. Africa iv, pl. xxxi.
- Histurgops ruficauda*, figured; SHELLEY, t. c. pl. xxxvi, fig. 2.
- Amblyospiza capitalba*, figured; id. t. c. pl. xxxvi, fig. 1.
- A. albifrons* and its allies; NEUMANN, J. Ornith. 1905, pp. 342 & 343.
- Textor albirostris scioanus* and allied species, notes on; id. t. c. pp. 335 & 336: *T. a. nyansa*, n. subsp., Kavirondo; id. t. c. p. 335.

Family ICTERIDÆ.

- Ostinops decumanus*, nesting materials; HUBER, Bol. Mus. Goaldi iv, p. 471.
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IV. REPTILIA AND BATRACHIA.

BY

I. B. J. SOLLAS.

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V. PISCES.

BY

I. B. J. SOLLAS, B.Sc.

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- Sparus schlegeli*, Bleek., figured, OTAKI, FUJITA & HIGURASHI, Fishes of Japan.
- Pagrus nigripinnis*, sp. n., BOULENGER, Ann. S. African Mus. iii, Natal Coast.

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PERCIDÆ.

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VI. TUNICATA.

BY

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 British Seas, *Ascidia*, n. spp.; ALDER & HANCOCK (1): Firth of Clyde, *Appendicularia*; BROWNE (4): Irish Sea, *Oikopleura*; A. SCOTT (36): Valencia, Ireland, pelagic Tunicata; DELAP (9).
 Bay of Biscay, *Thaliacea*; FOWLER (11).
 Coast of French Somaliland, n. spp.; SLUITER (39 & 40).
 Mauritius, n. spp.; HARTMEYER (12).
 Bass' Straits, *Polycarpa*, n. spp.; MICHAELSEN (24).
 Malay Archipelago, n. spp.; SLUITER (38).
 Tropical Pacific, pelagic Tunicata, n. sp.; RITTER & BYXEE (33).
 California, n. sp.; RITTER (32).
 Arctic and Antarctic *Appendicularia*; LOHMANN (19).
 Antarctic; HODGSON (15).

2. Geological.

[Vacant.]

III. SYSTEMATIC INDEX†.

- Aplidium africanum*, Djibouti; SLUITER, Bull. Mus. Paris xi, 1906, p. 103; & Mein. Soc. zool. France xviii, p. 17, pl. ii, fig. 9, **n. sp.**
- Appendicularia*, Firth of Clyde; BROWNE, P. R. Soc. Edinb. xxv, p. 789: Valencia; DELAP, Ann. Rep. Fish. Ireland, 1902-03, Pt. ii, App. I, pp. 1-19.
- Ascidia*, all British spp. descr. and figured; ALDER & HANCOCK, Brit. Tun. i: notes on spp.; BJERKAN, Bergens Mus. Aarbog 1906, No. 5, p. 14.
- A. mollis*, var. *carnosa*, **n. var.**, p. 94, pl. v, figg. 7-11, *scabra*, var. *echinata*, **n. var.**, p. 132, pl. xv, figg. 5-7, var. *lævis*, **n. var.**, p. 132, *normani*, var. *resplendens*, **n. var.**, p. 135; ALDER & HANCOCK, Brit. Tun. i.
- A. amana*, Britain, p. 116, pl. xi, figg. 1 & 2, pl. xviii, fig. 2, *morei*, Dublin, p. 126, pl. xiv & text-fig. 23; ALDER & HANCOCK, t. c.: *A. obocki* and *somaliensis*, p. 101; SLUITER, Bull. Mus. Paris xi, 1906: *A. obocki*, p. 7, pl. i, figg. 1-1c, *somaliensis*, p. 8, pl. i, figg. 2-2b, Tadjourah; SLUITER, Mem. Soc. zool. France xviii: **n. spp.**
- Boltenia spinifera*, p. 72, pl. iv, figg. 1 & 2; MICHAELSEN, Zool. Jahrb. Suppl. viii.
- Botrylloides rubrum*, spermatozoa, p. 88, pl. xi; RETZIUS, Biol. Untersuch. (n. F.) xii.
- Ciona intestinalis*, self-fertilisation; MORGAN, Biol. Bull. viii, p. 313.
- Clavellina*, degeneration and regeneration; DRIESCH, Arch. Entwicklmech. xx, pp. 21-29, 3 text-figg.: *Clavellina enormis*, p. 394, text-figg. A-C; HARTMEYER, Zool. Jahrb. Suppl. viii.
- Colella möbiusi*, Mauritius, p. 396, pl. xiii, figg. 2 & 3; HARTMEYER, t. c. **n. sp.**
- Cyclosalpa dolichosoma-virgula*, eye and neural gland; METCALF & JOHNSON, Biol. Bull. ix, p. 196: *C. affinis*, p. 59, text-figg. 9-11; RITTER, Univ. Calif. publ. Zool. ii (3).
- C. bakeri*, California, p. 54, pls. ii & iii; RITTER, t. c. **n. sp.**
- Cynthia (Styela) partita*, early development; CONKLIN, Biol. Bull. viii, pp. 205-230, 1 pl., and J. exp. Zool. ii, pp. 145-223, 82 text-figg.
- Cynthiopsis præputialis*, p. 91; MICHAELSEN, Zool. Jahrb. Suppl. viii.
- Dicopia*, **n. g. fimbriata, Malay Archipelago, p. 325, text-fig. 1; SLUITER, Tijdschr. Nederland. Dierk. Ver. (2) ix (1 & 2), **n. sp.****
- Didemnopsis variabile*, p. 22, pl. iii, fig. 9; BJERKAN, Bergens Mus. Aarbog 1906, No. 5.
- Diplosoma gelatinosum*, development of colony; PIZON, Arch. Zool. exp. (4) iv.
- Distaplia clavata*, p. 16, pl. iii, figg. 1-3; BJERKAN, Bergens Mus. Aarbog 1906, No. 5.
- Dolchinia mirabilis*, p. 389; KOROTNEFF, C.R. Congr. Zool. vi, Berne.
- Doliolum tritonis*, p. 89, *krohnii*, p. 90, *nationalis*, p. 90, **sp.**, p. 90; FOWLER, Tr. Linn. Soc. London x (4): *D. tritonis*, p. 85, text-figg. 24-26, *ehrenbergii*, p. 91, text-figg. 27 & 28, *mülleri*, p. 95, text-fig. 29; RITTER, Univ. Calif. publ. Zool. ii (3).
- Fritillaria pellucida* and *borealis*, anatomy; SALENSKY, Mem. Ac. St. Petersb. (8) xv (1): *F. borealis*, p. 361, pl. xii, figg. 10-12, *fraudax*, p. 365, pl. xii, fig. 9; LOHMANN, Zool. Jahrb. Suppl. viii.
- F. antarctica*, Bouvet Id., p. 364, pl. xii, figg. 8, 13 & 13a; LOHMANN, t. c. **n. sp.**
- Halocynthia pallida*, p. 78, pl. iv, fig. 11, *grandis*, p. 85; MICHAELSEN, Zool. Jahrb. Suppl. viii: *H. gangetion*, p. 15, pl. ii, figg. 6 & 6a, *momus*, p. 15, pl. ii, figg. 7 & 7a; SLUITER, Mem. Soc. zool. France xviii.

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- Hexacrobylus*, **n. g.** *psammatoles*, Malay Archipelago, p. 326, text-fig. 2; SLUITER, Tijdschr. Nederland. Dierk. Ver. (2) ix (1 & 2), **n. sp.**
- Leptoclinides*, **n. g.** (*Didemnidae*), *feröensis*, Iceland and Færoe, p. 20, pl. iii, figg. 4-8; BJERKAN, Bergens Mus. Aarbog 1905, No. 5, **n. sp.**
- Leptoclinum biatriatum*, Obock; SLUITER, Bull. Mus. Paris xi, 1905, p. 103, and Mem. Soc. zool. France xviii, p. 18, pl. ii, figg. 10-10b: *L. octogesium*, Mauritius, p. 402, pl. xiii, figg. 4 & 5; HARTMEYER, Zool. Jahrb. Suppl. viii: **n. spp.**
- Macroclinum pomum*, p. 17; BJERKAN, Bergens Mus. Aarbog 1905, No. 5.
- Molgula herdmanni*, Faroe-Shetland Channel, p. 5, pl. i, figg. 1-6; BJERKAN, t. c. **n. sp.**
- Oikopleura*, Irish Sea; A. SCOTT, P. Liverp. biol. Soc. xix, pp. 21 & 227: *O. vanhoeffeni*, p. 355, *chamissonis*, p. 356, *labradorensis*, p. 356, pl. xii, figg. 1 & 6; LOHMANN, Zool. Jahrb. Suppl. viii: *O. dioica*, spermatozoa, p. 88, pl. xix; RETZIUS, Biol. Untersuch. (n. F.) xii: *O. huxleyi* [**n. nom.** for] *Appendicularia flagellum*, Huxley, p. 206, pl. ii, figg. 9-11; RITTER & BYXBEE, Mem. Mus. Harvard xxvi (5): *O. rufescens*, anatomy; SALENSKY, Mem. Ac. St. Petersb. (8) xv (1).
- O. gaussica*, p. 359, pl. xii, figg. 2, 4 & 7, *valdivia*, p. 360, pl. xii, figg. 3 & 5, Antarctic Sea; LOHMANN, Zool. Jahrb. Suppl. viii, **n. spp.**
- Polyandrocarpa violacea*, Djibouti; SLUITER, Bull. Mus. Paris xi, 1905, p. 101, and Mem. Soc. zool. France xviii, p. 10, pl. i, figg. 3-3b, **n. sp.**
- Polycarpa libera*, p. 11, pl. ii, figg. 5-7; BJERKAN, Bergens Mus. Aarbog 1905, No. 5: *P. nigricans*, p. 390, pl. xiii, figg. 1, 12-14; HARTMEYER, Zool. Jahrb. Suppl. viii: *P. sulcata*, p. 97, *pedunculata*, p. 98, pl. iv, figg. 9 & 10, *obscura*, p. 107, *nebulosa*, p. 110, *elata*, p. 112, pl. iv, figg. 3-5; MICHAELSEN, Zool. Jahrb. Suppl. viii.
- P. mobii*, Bass Straits, p. 104, pl. iv, figg. 6-8; MICHAELSEN, Zool. Jahrb. Suppl. viii, **n. sp.**
- Polyclinum festum*, Mauritius, p. 400, pl. xiii, figg. 6 & 7; HARTMEYER, Zool. Jahrb. Suppl. viii, **n. sp.**
- Pyrosoma*, embryology; KOROTNEFF, Mt. Stat. Neapel xvii, pp. 295-311, pls. xvii-xix, 4 text-figg.: *P. giganteum*, p. 98, text-figg. 30 & 31; RITTER, Univ. Calif. publ. Zool. ii (3).
- P. agassizi*, near Marquesas Ids., p. 201, pls. i & ii, figg. 1-8; RITTER & BYXBEE, Mem. Mus. Harvard xxvi (5), **n. sp.**
- Salpa*, spp., structure of eyes; REDIKORZEW, Morphol. Jahrb. xxxiv, pp. 204-239, pl. vi: *S. runcinata-fusiformis*, *echinata*, *democratica-mucronata* (!), p. 99; FOWLER, Tr. Linn. Soc. London x (4): *S. punctata*, eye and neural gland; METCALF & JOHNSON, Biol. Bull. ix, p. 196: *S. fusiformis-runcinata*, p. 64, text-figg. 12 & 13, form *echinata*, p. 67, text-figg. 14 & 15, *tilesii-costata*, p. 70, text-figg. 16 & 17, *democratica-mucronata*, p. 73, text-figg. 18 & 19, *zonaria-cordiformis*, p. 76, text-figg. 20 & 21, *cylindrica*, p. 79, text-figg. 22 & 22¹, *confederata-scutigera*, p. 80, text-fig. 81; RITTER, Univ. Calif. publ. Zool. ii (3).
- Stolonica prolifera*, Somali coast; SLUITER, Bull. Mus. Paris xi, 1905, p. 102, and Mem. Soc. zool. France xviii, p. 12, pl. ii, figg. 5-5e, **n. sp.**
- Styela plicatu*, p. 384; HARTMEYER, Zool. Jahrb. Suppl. viii.
- S. doliolum*, Norwegian Seas, p. 8, pl. i, figg. 7-8, pl. ii, figg. 1-4; BJERKAN, Bergens Mus. Aarbog 1905, No. 5: *S. natalis*, Mauritius, p. 387, pl. xiii, figg. 8-11; HARTMEYER, Zool. Jahrb. Suppl. viii: *S. miniata*, Somali coast; SLUITER, Bull. Mus. Paris xi, 1905, p. 102, and Mem. Soc. zool. France xviii, p. 11, pl. i, figg. 4-4c, **n. spp.**
- Thaliacea* of Valencia; DELAF, Ann. Rep. Fish. Ireland, 1902-03, Pt. ii, App. I, pp. 1-9.

VII. MOLLUSCA.

BY

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Assisted by E. A. SMITH, I.S.O.

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INTRODUCTION.

THE literature attributable to the year 1905 seems to be of about the usual standard, both in quality and quantity.

As usual, we have to chronicle further progress by PILSBRY (600) with 'Tryon's Manual,' he having continued his study of the *Achatinidae*. KOBELT (387) has continued 'Martini & Chemnitz,' dealing with the *Agnatha*, *Naninidae* and *Helix*. Further portions of 'Bronn's Thierreich' from the pen of SIMROTH (68) have appeared and another part of TAYLOR'S (591) account of the British non-marine fauna; more rapid progress would double the value of these works. Both BERGH (42) and KOBELT (339, 343) have written in Semper's well-known 'Reisen,' on the marine and land fauna of the Philippines, respectively: the latter author having also continued (340, 495) his study of the Palaearctic non-marine fauna and the account of the European marine Mollusca.

The marine 'Expeditions' have not been so prolific as in the last few years. MEISENHIMER (394) has written an elaborate account of the Pteropods collected during the German deep-sea Expedition, with valuable details, both anatomical and geographical. NIERSTRASZ (420) and BERGH (41) have described the Chitons and Opisthobranchs of the 'Siboga' Expedition, respectively, and ELIOT (201) the Nudibranchs of the 'Antarctic,' while HÄGG (257) has completed the review of the forms found during the Swedish Polar Expedition.

Several papers relating to Nudibranchs may perhaps be grouped together. The East African fauna has been studied by ELIOT (200); that of California by COCKERELL & ELIOT (128) and, so far as regards the *Dorididae*, by MACFARLAND (376); the South Australian species have been catalogued by BASEDOW & HEDLEY (30); while New Zealand has received attention from BENHAM (40).

The European *Turbinidae* and Opisthobranchs have been reviewed by LOCARD (364, 365). To FARRAN (204) we owe a useful account of some Opisthobranchs from Ceylon, while a number of shells from that island have been described by PRESTON (474) and SOWERBY (553). HIDALGO (286) has issued a catalogue of the marine fauna of the Philippines, and PILSBRY (459) has described further Japanese forms. As of old, HEDLEY (266, &c.) has written on the Australian fauna; SUTER (572, &c.) has added to our knowledge of New Zealand Molluscs; while Miss LODDER (367) has catalogued the species of Tasmania. Further studies on the Magellanic Mollusca have been written by STREBEL (568, 569).

Turning to papers devoted especially to non-marine forms, we may firstly note those by BOETTGER (57) on the Cameroons; GERMAIN (228, &c.) on Central Africa; and NEUVILLE & ANTHONY (414, 415) on Abyssinia. The contributions on the Asiatic fauna are of considerable interest: PILSBRY & HIRASE (461, 462) have described further shells from the Japanese Empire and given an account of the Formosan Molluscs; DAUTZENBERG & FISCHER (171) have added to our knowledge of the fauna of Tonkin; MARTENS (384) has dealt with some freshwater shells from Corea; and BLANFORD (47)—whose name we deeply regret appears for the last time—has described some Zonitoids from the Indian Region. DALL (165) has written a valuable account of the Alaskan fauna. As usual several papers have appeared relating to the North American fauna, notably by BAKER (19, &c.), CLAPP (114, &c.), PILSBRY (553, &c.), STERKI (562, &c.), WALKER (620, &c.), and WHITEAVES (663, &c.); special mention may be made of PILSBRY'S (460) on the *Urocoptidae* and *Helicidae* of the South Western States. The Bahamas Mollusca have been studied by DALL (158, 159). Several notes on the Neozelanian fauna by SUTER (575, &c.) will repay attention.

Artificial parthenogenesis has been studied by LOEB (368, 369); MARCEAU (378, &c.) has worked on the heart and muscles; SPILLMANN (555) the heart in the Diotocards; CARLSON (86, &c.) the physiology of the heart, &c.

Cephalopod anatomy has attracted a number of workers; we can only mention MERTON (404) on the retina, HESS (278) on the eye, and the papers by SCHWEIKART (510) and JOUBIN (313, 315).

Amongst the papers dealing with Gastropod embryology may be named those of OTTO & TÖNNIGES (430) on *Paludina*, WIERZEJSKI (642) on *Physa*, and SCHIMKEWITSCH (505, 506) on *Philina*. PILSBRY (450, &c.) has given a useful account of the anatomy of some Helicoids; SIMROTH (529, &c.) has issued some notes on Slugs; and we record the paper by REYNELL (487) on *Cassidaria*, as also those of DISTASO (184, &c.) on *Cæcidæ* and *Dentalium*. The Gastropod protoconch has been studied by KESTIVEN (327, 328). A curious case of duplication of the eye in *Helix* has been noticed by WIEGMANN (640). The development of Pelecypods has formed the subject of papers by ANTHONY (11, &c.); LLOYD (363) has dealt with the boring mechanism in molluscs; while HERDMAN (275, &c.) and BLOOMER (49, &c.) have, respectively, written on the anatomy of the Pearl Oyster and the *Solenidæ*. The habits and anatomy of the Amphineura have been studied by HEATH (263, &c.), and we may notice the paper by SCHWEIKART (510).

A review of the genera of the *Mytilidæ* has been issued by JUKES-BROWNE (317). WAGNER's (617, 618) studies on *Helicina* have resulted in a very large number of new names, which may duly be seen in the systematic portion. A useful task has been undertaken by MAY (391) who has critically reviewed a number of Tenison-Woods' 'types.'

In conclusion, I would desire, since after the present year the form of the 'Record' will be altered, to take this, the last, opportunity of expressing my grateful thanks not only to Mr Edgar Smith, who has kindly assisted me for so many years past, but also to those many friends, by whose help in furnishing reprints and pointing out errors of commission and omission, it has alone been possible to fulfil my task.

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1. ADAMS, L. E. Conchological notes from the United States. J. Conch. xi, pp. 165-168.
2. —. A Plover with *Anodonta cygnea* attached to its foot. T. c. p. 175.
3. —. An account of the Mussel fishery and pearl-button industry of the Mississippi River. T. c. pp. 212-215.
— [See also WRIGHT & ADAMS (653).]
4. AIRAGHI, C. Ammoniti triasici (Muschelkalk) del M. Rite in Cadore. Boll. Soc. geol. Ital. xxiv, pp. 237-256, pl. viii.
5. ALDRICH, T. H. A new species of *Somatogyryus* from South Alabama. Nautilus xviii, p. 140, fig.
6. ALESSANDRI, G. DE. Avanzi di un nuovo genere di Cefalopodi dell' Eocene dei dintorni di Parigi. Riv. ital. Pal. xi, pp. 146-150.

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8. ANCEY, C. F. Remarks on some land and fresh-water shells from the New Hebrides, with description of new species. Nautilus .xix, pp. 42-46.
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15. ARTHABER, G. VON. Lethaea geognostica. II. Theil. Das Mesozoicum. i. Band. Trias. Lief. 3, Die alpine Trias des Mediterran-Gebietes. Stuttgart, 1905, pp. 223-472, pls. xxxiv-lx.
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S. Europe:—Notes on *Veritina*; KORMOS (344).—Donaustauf on Danube: Occurrence of *Helix fatens*; CLESSIN, Nachrbl. Deutsch. malak. Ges. 1905, p. 204.

S. France:—N. spp. of *Balia*, *Helix*, and *Limnea*; CAZIOT (94).—Land shells from the Vosges; CAZIOT (98).

Spain:—Few land and fresh-water shells from Granada and Carmona; BULLEN (81).—List of land and fresh-water shells from Ripoll; MALUQUER y NICOLAU (377).

Portugal:—Fauna recorded; ANON., Annuar. Ac. Porto 1895–6, p. 54; 1898–1900, p. 98; 1900–1, p. 84; 1903–4, p. 108.

Corfu:—List of non-marine fauna; PAGANETTI-HUMMLER (435): N. spp. of *Agriolimax* and *Limax*; SIMROTH (530).

Italy:—*Zospeum*, with n. spp.; POLLONERA (469).—Naples: *Campylaea philippii*, n. sp.; KOBELT (335).

Tirol:—A few shells; GREDLER (246): Few fresh-water shells; HUBER, Arch. Hydrobiol. i, p. 68.

Calabria:—N. spp. of *Murella*; KOBELT (336).

Montenegro:—Slugs from, with *Limax mraskei*, n. sp.; SIMROTH (530): about twenty spp. listed; PETRBOK (446).

Bosnia:—*Limax mraskei*, n. sp.; SIMROTH (530).

Greece:—*Vitreola tomlini*, n. sp.; SMITH (542).

Crete:—Few land shells from; BULLEN (80).

Caucasus:—Fauna, with n. var. of *Anodonta* and *Pupa*; ROSEN (494).

Turkey:—New species of *Helix*; KOBELT in MARTINI & CHEMNITZ (387).

Asia Minor:—*Helix ancycensis*, n. sp.; KOBELT in MARTINI & CHEMNITZ (387).

Palestine:—New species of *Helix*; KOBELT in MARTINI & CHEMNITZ (387).

Cilicia:—Shells, with n. spp. of *Calostola*, *Daudebardia*, *Daudebardiella* (n. gen.), *Helix*, *Lartetia*, and *Paulia*; BOETTGER (56).

Tunis:—Few shells noticed; CHAIGNON, Bull. Soc. Autun xvii, pp. 86, 165.

Tripoli:—*Helix grothi*, n. sp.; KOBELT in MARTINI & CHEMNITZ (387).

3. Central Asiatic Region.

Transcaspia:—*Buliminus larvatus*, n. sp.; KOBELT in ROSSMÄSSLER (495).

4. Chinese Region.

China:—*Miluna josephinae*, n. gen. and sp.; WAGNER (617).

Formosa:—*Mallendorffia hiraseana*, n. sp.; PILSBRY (456): Review of fauna, with n. spp. of *Alycaeus*, *Blanfordia*, *Cyathopoma*, *Diplommatina*, *Eulota*, *Helicarion*, *Japonia*, *Kaliella*, *Macrochlamys*, *Microcystina*, *Palaina*, *Pseudopomatias*, *Punctum*, *Sitala*, and *Trochomorpha*; PILSBRY & HIRASE (462): *Philomycus taiwanensis*, n. sp.; SIMROTH (529).

5. Japanese Region.

Japanese Empire:—Shells from, with n. spp. of *Eulota*, *Kaliella*, *Macrochlamys*, *Microcystina*, *Oteria*, *Palaina*, *Punctum*, *Tornatellina*, and *Truncatella*; PILSBRY & HIRASE (462): N. spp. of *Philomycus*; SIMROTH (529).

Loochoos:—*Philomycus daderleini*, n. sp.; SIMROTH (529).

6. Atlantidean Region.

[None.]

b. PALEOTROPICAL AFRICAN ZONE.

7. Central African Region.

N. E. Africa:—N. spp. of *Africarion*, *Bloyetia*, *Homorus*, and *Vitrina*(?); KOBELT (337).

E. ? Africa:—*Urocyclus ehlersi*, n. sp.; SIMROTH (529).

Central Africa:—List of shells, with n. var. of *Achatina schweinfurthi*; GERMAIN (230).

Central Africa:—Molluscs of expedition to Lake Tchad and the Chari Region with n. spp. of *Ampullaria*, *Bithynia*, *Fischeria*, *Limicolaria*, *Mutela*, *Mutelina*, *Planorbis*, *Planorbula*, *Segmentina*, *Spatha*, and *Sphaerium*; GERMAIN (239).—Lake Tchad: *Vivipara lenfanti*, n. sp.; GERMAIN (231): Notes on some shells; BOETTGER (54).

Tanganyika:—Land and fresh-water shells, with n. spp. of *Cleopatra*, *Planorbis*, *Serpæa*, and *Vivipara*; GERMAIN (231).

Zambesi River:—Fresh-water shells, with n. spp. of *Cleopatra*, *Unio*, and *Vivipara*; PRESTON (473).—Zumbo on Zambesi River: *Achatina morrelli*, n. sp.; PRESTON (472).

Upper Congo:—*Lanistes foai*, n. sp.; GERMAIN (231).

8. West African Region.

West Africa:—N. spp. of *Homorus* and *Trichodina*; PILSBRY in TRYON (600).

Senegambia:—N. spp. of *Arthropteron* and *Mitriodon*, n. genn.; ROCHEBRUNE (490).

Siberia:—N. spp. of *Curvella*; PILSBRY in TRYON (600).

Cameroons:—Fauna, with n. varr. and n. spp. of *Achatina* and *Ennea*; BOETTGER (57).

9. South African Region.

South Africa:—N. spp. of *Curvella*, *Ena* and *Obeliscus*; BURNUP (83).—Land and freshwater shells from Kalahari, with n. spp. of *Succinea* and *Vivipara*; MARTENS (385).

10. Malagasy Region.

Mauritius:—*Gibbulina obesa*, n. sp.; KOBELT in MARTINI & CHEMNITZ (387): Occurrence of *Macrochlamys*; GODWIN-AUSTEN (241).

11. Afro-Arabian Region.

Abyssinia:—Shells from, with n. spp. of *Ennea* and *Stenogyra*; NEUVILLE & ANTHONY (414): Shells from, with *Bulimus rothschildianus*, n. sp.; NEUVILLE & ANTHONY (415).

Somali Desert:—List of shells from; GERMAIN (228).

C. PALÆOTROPICAL ORIENTAL ZONE.

12. Indian Region.

India:—N. spp. of *Bensonina*, *Euplecta*, *Macrochlamys*, *Microcystina*, *Polita* (?), and *Taphrospira* (n. gen.); BLANFORD (47).

Ceylon:—N. spp. of *Diplommatina*; PRESTON (475): Notes on *Cataulus*, with new forms; SYKES (587).

Andamans:—*Microcystina stuarti*, n. sp.; BLANFORD (47).

Great Cocos Is.:—*Macrochlamys pseudochoinix*, n. sp.; BLANFORD (47).

Christmas Island:—*Jaminia proscripta*, n. sp.; SMITH (547).

13. Indo-Chinese Region.

Burma:—N. spp. of *Macrochlamys*; BLANFORD (47).

Siam:—*Chamberlainia pavonina*, n. sp.; ROCHEBRUNE (491).

Tonkin:—List of Collection, with n. varr., notes on synonymy, and n. spp. of *Helix*, *Kaliella*, *Limnaea*, *Mallendorffia*, *Streptaxis*, and *Unio*; DAUTZENBERG & FISCHER (171): *Tortaxis lubricus*, ? n. sp.; PILSBRY in TRYON (600): *Simpsonia demangei*, n. sp.; ROCHEBRUNE (491): N. spp. of *Philomycus*; SIMROTH (529): *Aphanoconia halongensis*, n. sp.; WAGNER (617).

Yunnan:—*Ariophanta innata*, n. sp.; FULTON (217).

14. Indo-Malay Region.

Borneo:—N. spp. of *Cyclotus*, *Diplommatina*, *Helicarion*, and *Lagochilus*; FULTON (217).—North Borneo: *Opisthostoma fraternum*, n. sp.; SMITH (545).—Sarawak: Three n. spp. of *Opisthostoma*; SMITH (539).

Banguey I.:—*Aphanoconia trichrou*, n. sp.; WAGNER (617).

Java:—*Chloritis malangensis*, n. sp.; BULLEN (79): *Plectotropis leucochila*, n. sp.; GUDE (252).

Java and Sumatra:—*Prosopaea holosericum*, n. sp.; PILSBRY in TRYON (600).

Bawean:—N. subsp. of *Amphidromus*; FRUHSTORFER (214).

Engano:—N. subsp. of *Amphidromus*; FRUHSTORFER (214).

Gisser I.:—Varieties of *Xesta citrina* and *Planispira zebra*; BULLEN (79).

West Sumatra:—*Amphidromus bulowi*, n. sp.; FRUHSTORFER (213): N. spp. of *Dyakia*; SYKES (583).

15. Philippine Region.

Philippines:—*Helicostyla mearnsi*, n. sp.; BARTSCH (28): Species of *Inozonites* and *Trochomorpha*; KOBELT (339): Of *Obbina*; KOBELT & WINTER (343): *Sulfurina euchromia*, n. sp.; WAGNER (618).

d. AUSTRALIAN ZONE.

16. Austro-Malayan Region.

New Guinea:—*Planispira tectorium*, n. sp.; FULTON (220): N. spp. of *Aphanoconia* and *Sulfurina*; WAGNER (617).—British New Guinea: *Planispira blackiana*, n. sp.; PRESTON (471): N. spp. of *Chloritis*, *Hemiplecta*, *Papuina*, and *Rhyssota*; SMITH (546): *Palaeohelicina hara*, n. sp.; WAGNER (618).

Kei Is.:—*Aphanoconia keiensis*, n. sp.; WAGNER (617).

Aru:—*Chloritis lintere*, n. sp.; GUDE (252).

Woodlark I.:—*Aphanoconia braueri*, n. sp.; WAGNER (617).

Halmahera:—*Sulfurina laura*, n. sp.; WAGNER (617).

Louisiades:—N. spp. of *Aphanoconia* and *Palaeohelicina*; WAGNER (617).

New Ireland:—N. spp. of *Papuina*; FULTON (220).

Solomon Is.:—*Papuina lilium*, n. sp.; FULTON (220).

17. Australian Region.

South Australia:—Shells from North-West Territory, with n. spp. of *Thersites* and *Xanthomelon*; HEDLEY (270): *Thalassia cyrtochila*, n. sp.; GUDE (252).

New South Wales:—*Sitala pudica*, n. sp.; GUDE (252).

Tasmania:—Notes on fauna; LODDER (367): Shells from Maria Island with n. spp. of *Ancylus* and *Helix*; PETTERD (447).

18. Austro-Polynesian Region.

Samoa:—*Sturanya jetschiri*, n. sp.; WAGNER (617).

New Caledonia:—N. spp. of *Charopa* and *Endodonta*; GUDE (252).

Loyalty Is.:—*Charopa lifuana*, n. sp.; GUDE (252).

New Hebrides:—Shells, with n. spp. of *Paluina*, *Physa*, and *Potamopyrgus*; ANCEY (8).

19. Polynesian Region.

Hawaiian Is.:—Notes on shells, with n. spp. of *Amastra* and *Endodonta*; PILSBRY & VANATTA (464): N. spp. of *Endodonta* and *Opeas*; PILSBRY & VANATTA (466).

Tahiti:—*Aphanoconia pentheri*, n. sp.; WAGNER (617).

Senegambia:—N. spp. of *Arthropteron* and *Mitriodon*, n. genn.; ROCHEBRUNE (490).

Siberia:—N. spp. of *Curvella*; PILSBRY in TRYON (600).

Cameroons:—Fauna, with n. varr. and n. spp. of *Achatina* and *Ennea*; BOETTGER (57).

9. South African Region.

South Africa:—N. spp. of *Curvella*, *Ena* and *Obeliscus*; BURNUP (83).—Land and freshwater shells from Kalahari, with n. spp. of *Succinea* and *Vivipara*; MARTENS (385).

10. Malagasy Region.

Mauritius:—*Gibbulina obesa*, n. sp.; KOBELT in MARTINI & CHEMNITZ (387): Occurrence of *Macrochlamys*; GODWIN-AUSTEN (241).

11. Afro-Arabian Region.

Abyssinia:—Shells from, with n. spp. of *Ennea* and *Stenogyra*; NEUVILLE & ANTHONY (414): Shells from, with *Bulimus rothschildianus*, n. sp.; NEUVILLE & ANTHONY (415).

Somali Desert:—List of shells from; GERMAIN (228).

C. PALÆOTROPICAL ORIENTAL ZONE.

12. Indian Region.

India:—N. spp. of *Bensonina*, *Euplecta*, *Macrochlamys*, *Microcystina*, *Polita* (?), and *Taphrospira* (n. gen.); BLANFORD (47).

Ceylon:—N. spp. of *Diplommatina*; PRESTON (475): Notes on *Cataulus*, with new forms; SYKES (587).

Andamans:—*Microcystina stuarti*, n. sp.; BLANFORD (47).

Great Cocos Is.:—*Macrochlamys pseudochoinix*, n. sp.; BLANFORD (47).

Christmas Island:—*Jaminia proscripta*, n. sp.; SMITH (547).

13. Indo-Chinese Region.

Burma:—N. spp. of *Macrochlamys*; BLANFORD (47).

Siam:—*Chamberlainia pavonina*, n. sp.; ROCHEBRUNE (491).

Tonkin:—List of Collection, with n. varr., notes on synonymy, and n. spp. of *Helix*, *Kaliella*, *Limnaea*, *Mallendorffia*, *Streptaxis*, and *Unio*; DAUTZENBERG & FISCHER (171): *Tortaxis lubricus*, ? n. sp.; PILSBRY in TRYON (600): *Simpsonia demangei*, n. sp.; ROCHEBRUNE (491): N. spp. of *Philomycus*; SIMROTH (529): *Aphanoconia halongensis*, n. sp.; WAGNER (617).

Yunnan:—*Ariophanta innata*, n. sp.; FULTON (217).

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Borneo:—N. spp. of *Cyclotus*, *Diplommatina*, *Helicarion*, and *Lagochilus*; FULTON (217).—North Borneo: *Opisthostoma fraternum*, n. sp.; SMITH (545).—Sarawak: Three n. spp. of *Opisthostoma*; SMITH (539).

Banguey I.:—*Aphanoconia trichroua*, n. sp.; WAGNER (617).

Java:—*Chloritis malangensis*, n. sp.; BULLEN (79): *Plectotropis leucochila*, n. sp.; GUDE (252).

Java and Sumatra:—*Prosopaea holosericum*, n. sp.; PILSBRY in TRYON (600).

Bawean:—N. subsp. of *Amphidromus*; FRUHSTORFER (214).

Engano:—N. subsp. of *Amphidromus*; FRUHSTORFER (214).

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d. AUSTRALIAN ZONE.

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Halmahera:—*Sulfurina laura*, n. sp.; WAGNER (617).

Louisiades:—N. spp. of *Aphanoconia* and *Paleohelicina*; WAGNER (617).

New Ireland:—N. spp. of *Papuina*; FULTON (220).

Solomon Is.:—*Papuina lilium*, n. sp.; FULTON (220).

17. Australian Region.

South Australia:—Shells from North-West Territory, with n. spp. of *Thersites* and *Xanthomelon*; HEDLEY (270): *Thalassia cyrtochila*, n. sp.; GUDE (252).

New South Wales:—*Sitala pudica*, n. sp.; GUDE (252).

Tasmania:—Notes on fauna; LODDER (367): Shells from Maria Island with n. spp. of *Ancylus* and *Helix*; PETTERD (447).

18. Austro-Polynesian Region.

Samoa:—*Sturanya jetchini*, n. sp.; WAGNER (617).

New Caledonia:—N. spp. of *Charopa* and *Endodonta*; GUDE (252).

Loyalty Is.:—*Charopa lifuana*, n. sp.; GUDE (252).

New Hebrides:—Shells, with n. spp. of *Paluina*, *Physa*, and *Potamopyrgus*; ANCEY (8).

19. Polynesian Region.

Hawaiian Is.:—Notes on shells, with n. spp. of *Amastre* and *Endodonta*; PILSBRY & VANATTA (464): N. spp. of *Endodonta* and *Opeas*; PILSBRY & VANATTA (466).

Tahiti:—*Aphanoconia pentheri*, n. sp.; WAGNER (617).

1. *Arctic Province.*

Spitzbergen:—List of species with *Buccinum bromsi*, n. sp.; HÄGG (257).
Jan Mayen Is.:—Some species enumerated; HÄGG (257).

2. *Boreal Province.*

Shells from near Drobak; KLÆR (329).

3. *Celtic Province.*

Germany:—Occurrence of *Mya arenaria*; LORENZEN (371).
British Isles:—*Hero formosa*, n. var.; ELIOT (198).—Teuby: Addenda to Fauna; VAUGHAN (603).—Burnham-on-Crouch: Notes on *Crepidula*; COOPER, J. Conch. xi, p. 227.—Occurrence of *Ostrea angulata* at Southend; PETCH (445).—Notes on *Pecten incomparabilis*; KNIGHT, Tr. Soc. Glasgow vii, p. 117.—Isle of Man: *Mytilus fry* in tow-nets; HERDMAN, P. Liverp. biol. Soc. xix, p. 214.—Ireland: Notes on fauna of Skerries; COLGAN (129): Occurrence of *Sthenoteuthis pteropus*; NICHOLS (419).

4. *Lusitanian Province.*

S. Atlantic Ocean:—*Pneumodermopsis macrochira*, n. sp.; MEISENHEIMER (394).

Portugal:—Fauna recorded; ANON., Annuar. Ac. Porto 1895-6, p. 54; 1899-1900, p. 98; 1900-1, p. 84; 1903-4, p. 108.

Off Cape St. Vincent:—*Marginella hesperia*, n. sp.; SYKES (585).

S. France:—Shells from Cette; HORSLEY (292): Notes on *Tapes*; HORSLEY (291).—Marseilles: Changes in fauna; BRIOT & GAVER (65).

Mediterranean:—Tectibranchs and Heteropods, with n. spp. of *Bulla* and *Tornatina*; LOCARD (365): *Trochidae*, with n. spp. of *Gibbula* and *Zizyphinus*; LOCARD (364); *Pseudoparastrophia levigata*, n. gen. and sp.; DISTASO (184).

Algeria:—Occurrence of *Natica intricatoides*, Hidalgo; ANCEY, Nautilus xix, p. 34.

5. *Arulo-Caspian Province.*

Caspian Sea:—Notes on fauna; OSTROUMOFF (429).

6. *West African Province.*

West Africa:—N. spp. of *Genota*, *Marginella*, and *Pusionella*; SYKES (585).

Gulf of Guinea:—N. spp. of *Pneumoderma* and *Thliptodon*; MEISENHEIMER (394).

Senegambia:—Notes on Oysters; ROCHEBRUNE (492).

Cape Verd Islands:—*Gibbula murchlandi*, n. sp.; SOWERBY (554): *Pecten keppelianus*, n. sp.; SOWERBY (552).

Sierra Leone:—N. spp. of *Conus*, *Diplodonta*, *Protoma*, *Tellina*, and *Venus*; SOWERBY (552).

Ascension Island:—N. spp. of *Pecten* and *Tellina*; SOWERBY (552).

7. *South African Province.*

Natal:—Notes on Nudibranchs with *Chromodoridella mirabilis*, n. gen. and sp.; ELIOT (197).

8. Indo-Pacific Province.

Indo-Pacific Province:—Review of Polyplacophora; NIERSTRASZ (420).
East Africa and Zanzibar:—Nudibranchs, with n. spp. of *Doto*, *Elysia*, *Facelina*, *Hervia*, *Orodoris*, *Phidiana*, and *Stiliger*; ELIOT (200).

Mayotte:—*Marginella repentina*, n. sp.; SYKES (585).

Djibouti and Obok:—List of *Cerithiidae*; VIGNAL (612): List of *Cypræidae*; VAYSSIÈRE (605): Catalogue of Gastropods from; LAMY (349): *Arcaidae* from; LAMY (348).

Red Sea and Gulf of Aden:—List of species, with n. spp. of *Drillia*, *Levanderina* (n. gen.), and *Rasta*; STURANY (571).

Red Sea:—*Ricinus lischkei*, n. sp.; HIDALGO (286).

Karachi, &c.:—Nudibranchs, with n. spp. of *Platydoris* and *Thecacera*; ELIOT (199).

Masandam Is.:—*Pecten cristatum*, n. sp.; BAVAY (34).

Indian Ocean:—*Marginella binotata*, n. sp.; SYKES (585): *Trochus* (*Lamprostoma*) *filiferus*, n. sp.; SCHEPMAN (504): N. spp. of *Cressia*, *Procymbulia* (n. gen.), *Notobranchæa*, *Schizobranchium* (n. gen.) and *Thliptodon*; MEISENHEIMER (394).

Ceylon:—On Nudibranchs and Tectibranchs, with n. spp. of *Ægires*, *Aplysia*, *Aplysiella*, *Chromodoris*, *Dolabrifera*, *Galvina*, *Halgerda*, *Hervia*, *Linguela*, *Notarchus*, *Phyllaplysia*, *Platydoris*, *Pleurobranchus*, and *Thordisa* (?); FARRAN (204): N. spp. of *Anatina*, *Callista*, *Cancellaria*, *Cerithiopsis*, *Cerithium*, *Clavatula*, *Columbella*, *Cultellus*, *Diala*, *Eulima*, *Fenella*, *Gastrana*, *Gena*, *Mangilia*, *Pyramidella*, *Retusa*, *Rissoina*, *Tornatina*, and *Turbonilla*; PRESTON (474): N. spp. of *Calliostoma*, *Clanculus*, *Columbella*, *Diplodonta*, *Ethalia*, *Euchelus*, *Fossarina*, *Fossarus*, *Minolia*, *Nerita*, *Omphalius*, *Scalaria*, *Scutellina*, *Solariella*, *Teinostoma*, and *Tritonidea*; SOWERBY (553).

Andamans:—N. spp. of *Pecten*; BAVAY (34).

Tonkin:—List of collection, with n. varr., notes on synonymy, and n. spp. of *Assiminea*, *Plecotrema*, and *Scintilla*; DAUTZENBERG & FISCHER (171).

East Indies:—Nudibranchs and Tectibranchs of the 'Siboga' Expedition, with n. spp. of *Acalesia*, *Anisodoris*, *Aplysia*, *Aplysiella*, *Aporodoris*, *Berthella*, *Carminodoris*, *Casella*, *Ceratosoma*, *Cerberilla*, *Chelidoneura*, *Chromodoris*, *Cratena*, *Diaulula*, *Discodoris*, *Doriopsilla*, *Doriopsis*, *Elysia*, *Ennoia*, *Flabellina*, *Gastropteron*, *Halgerda*, *Halla*, *Hervia*, *Hexabranchus*, *Marionia*, *Myrrhine* (n. gen.), *Nembrotha*, *Oscaniella*, *Oscanius*, *Peltodoris*, *Phanerophthalmus*, *Phestilla*, *Philine*, *Phyllaplysia*, *Phyllidia*, *Platydoris*, *Pleurobranchæa*, *Pleurobranchus*, *Pleuroleura*, *Pleurophyllidia*, *Spurilla*, *Thordisa*, *Timorella* (n. gen.), *Trevelyana*, *Triopa*, *Trippa*, and *Tritonia*; BERGH (41): Polyplacophora, with n. spp. of *Acanthochiton*, *Callistochiton*, *Callochiton*, *Chiton*, *Craspedochiton*, *Ischnochiton*, *Lepidopleurus*, *Leptoplax*, *Squamophoru* (n. gen.), *Squamopleura* (n. gen.), and *Tonicia*; NIERSTRASZ (420).

Pacific Ocean:—Notes on some *Cerithiidae*, with n. spp.; PILSBRY & VANATTA (467): *Aphelodoris pallida*, *Doriopsis punctatella*, n. spp.; BERGH (42).

Philippines:—List of Marine fauna completed; HIDALGO (285): *Latiaxis kieneri*, n. sp.; HIDALGO (286).

Hawaiian Is.:—N. spp. of *Cerithium*; PILSBRY & VANATTA (465).

Marshall Is.:—Occurrence of *Leptochiton*; SCHNEE (507).

Flint I.:—Shells from, with *Liotia voyi*, n. sp.; PILSBRY & VANATTA (463).

Caroline I.:—Shells from; PILSBRY & VANATTA (463).

Rapa I.:—*Pecten rapanensis*, n. sp.; BAVAY (32).

1. *Arctic Province.*

Spitzbergen:—List of species with *Buccinum bromsi*, n. sp.; HÄGG (257).
 Jan Mayen Is.:—Some species enumerated; HÄGG (257).

2. *Boreal Province.*

Shells from near Drobak; KLÆR (329).

3. *Celtic Province.*

Germany:—Occurrence of *Mya arenaria*; LORENZEN (371).
 British Isles:—*Hero formosa*, n. var.; ELIOT (198).—Teuby: Addenda to Fauna; VAUGHAN (603).—Burnham-on-Crouch: Notes on *Crepidula*; COOPER, J. Conch. xi, p. 227.—Occurrence of *Ostrea angulata* at Southend; PETCH (445).—Notes on *Pecten incomparabilis*; KNIGHT, Tr. Soc. Glasgow vii, p. 117.—Isle of Man: *Mytilus fry* in tow-nets; HERDMAN, P. Liverp. biol. Soc. xix, p. 214.—Ireland: Notes on fauna of Skerries; COLGAN (129). Occurrence of *Sthenoteuthis pteropus*; NICHOLS (419).

4. *Lusitanian Province.*

S. Atlantic Ocean:—*Pneumodermopsis macrochira*, n. sp.; MEISENHEIMER (394).

Portugal:—Fauna recorded; ANON., Annuar. Ac. Porto 1895-6, p. 54; 1899-1900, p. 96; 1900-1, p. 84; 1903-4, p. 108.

Off Cape St. Vincent:—*Marginella hesperia*, n. sp.; SYKES (585).

S. France:—Shells from Cette; HORSLEY (292): Notes on *Tapes*; HORSLEY (291).—Marseilles: Changes in fauna; BRIOT & GAVER (65).

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5. *Arulo-Caspian Province.*

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6. *West African Province.*

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Gulf of Guinea:—N. spp. of *Pneumoderma* and *Thliptodon*; MEISENHEIMER (394).

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Cape Verd Islands:—*Gibbula murchlandi*, n. sp.; SOWERBY (554): *Pecten keppelianus*, n. sp.; SOWERBY (552).

Sierra Leone:—N. spp. of *Conus*, *Diplodonta*, *Protoma*, *Tellina*, and *Venus*; SOWERBY (552).

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7. *South African Province.*

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Mayotte:—*Marginella repentina*, n. sp.; SYKES (585).

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 †*Bogdoites*, n. gen. for three 'forms of *Balatonites* from South Russia'; **KITTL**, Abh. geol. Reichsanst. xx, p. 11, footnote [om. 1903].
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- +*Calliconites*, n. gen. for *C. dieneri*, n. sp., Trias, Sicily; GEMMELLARO, Giorn. Soc. Palermo xxiv, p. 310.
- +*Clydonicerus*, n. gen. for *Ammonites discus*, Sby.; BLAKE (45), p. 53.
- +*Columbites*, n. gen., type *C. parisiensis*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 50.
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- +*Discotropites*, n. gen., type *Ammonites sandligensis*, Hauer, Trias, N. America; HYATT & SMITH (297), p. 61.
- +*Gonionotites*, n. gen. for *G. italicus*, n. sp., &c., Trias, Sicily; GEMMELLARO, Giorn. Soc. Palermo xxiv, p. 155.
- +*Gymnotropites*, n. subgen. of *Paratropites*, type *P. americanus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 56.
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- +*Inyoites*, n. gen., type *I. oweni*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 134.
- +*Lanceolites*, n. gen., type *L. compactus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 13.
- +*Leconteia*, n. gen., type *L. californica*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 35.
- +*Leopoldia*, n. gen. for *Ammonites leopoldi*, Orb., &c.; BAUMBERGER (31), p. 28.
- +*Licquites*, n. subgen. of *Dinarites* for *D. circumplicatus*, Mojs., &c.; KITTL, Abh. geol. Reichsanst. xx, p. 24 [om. 1903].
- +*Megalytoceras*, n. gen., 'genotype,' *Lytoceras confusum*, Buckm.; BUCKMAN, Quart. J. Geol. Soc. lxi, p. 150.
- +*Mojsisovicsites*, n. gen. for *M. crassecostatus*, n. sp., &c., Trias, Sicily; GEMMELLARO, Giorn. Soc. Palermo xxiv, p. 57.
- +*Nannolytoceras*, n. gen., 'genotype,' *Ammonites pygmaeus*, D'Orb.; BUCKMAN, Quart. J. Geol. Soc. lxi, p. 151.
- +*Neanites*, n. subgen. of *Clionites*, type *C. californicus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 189.
- +*Owenites*, n. gen., type *O. koeneni*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 82.
- +*Pachylitoceras*, n. gen., 'genotype' *Alocolytoceras torulosus*, Zieten; BUCKMAN, Quart. J. Geol. Soc. lxi, p. 144.
- +*Palicites*, n. gen. for *P. mojsisovici*, n. sp., Trias, Sicily; GEMMELLARO, Giorn. Soc. Palermo xxiv, p. 55.
- +*Paraceratites*, n. subgen. of *Ceratites* for *C. prior*, n. sp.; KITTL, Abh. geol. Reichsanst. xx, p. 29 [om. 1903].
- +*Paraganides*, n. gen., type *P. californicus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 77.
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- +*Shastites*, n. subgen. of *Clionites*, type *C. compressus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 188.
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- Plectotropis leucochila*, Java; GUDE, J. Malac. xii, p. 14, fig.: n. sp.
- Polygyra ferrissi*, n. subsp.; FERRISS, Nautilus xix, p. 67: *P. inflecta*, n. subsp.; CLAPP, t. c. p. 74.
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- Radiocentrum*, n. subgen. of *Oreohelix*, type *O. chiricahuana*, n. sp.; PILSBRY, t. c. p. 283.
- Solaropsis rugifera*, Dohrn, n. var.; IHERING, Rev. Mus. Paulista, p. 456.

- Sonorella*, review of, with n. subsp.; PILSBRY (460).
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Goniidromus, n. subgen. of *Amphidromus*, no species named; BÜLOW, Nachrbl. Deutsch. malak. Ges. 1905, p. 83 [*A. (G.) bulowi*, n. sp., descr. on same page; FRUHSTORFER].
Pilsbryella, n. subgen. of *Tomigerus* for *T. turbinatus*, &c.; IHERING, P. Malac. Soc. London vi, p. 199.
Strophocheilus (Borus) rugosus, n. n. for *santacruzii*, Pfr. & Pilsbry non d'Orb.; FULTON, J. Malac. xii, p. 23.
Strophocheilus (Borus) versatilis, Brazil (?), (*B.*) *semimalleatus*, Peru; FULTON, t. c. p. 24, figg. : n. spp.
Tomigerus laevis, *rochai*, p. 197, *corrugatus*, p. 198, Ceara; IHERING, P. Malac. Soc. London vi, figg. : n. spp.

BULIMINIDÆ, UROCOPTIDÆ, and PUPIDÆ.

- Balia malleyi*, S. France; CAZIOT, Bull. Soc. zool. France xxx, p. 45, fig. : Also in Rev. Sci. Bourbonnais 1905, p. 99 : n. sp.
Buliminus, phylogeny; WIEGMANN (641) : *B. albocostatus*, n. subsp., with figg. of *B. prusanus*, *sylvestris*; KOBELT in ROSSMÄSSLER (495).
Buliminus larvatus (Ancey MS.), Transcaspia; KOBELT in ROSSMÄSSLER (495), p. 21, fig. : n. sp.
Cerion glans, n. var.; DALL, Smithsonian. Collect. quart. xlvii, p. 437 : *C. cleuthere*, n. var.; DALL (158), p. 35.
Cerion (Strophiope) wallingense, p. 438, (*S.*) *inconspicuum*, p. 439, (*S.*) *variabile*, p. 440, (*S.*) *brunneum*, (*S.*) *plegmatum*, p. 441, (*S.*) *northropi*, p. 442, *oweni*, p. 443, Bahamas; DALL, Smithsonian. Collect. quart. xlvii, figg. : n. spp.
Clausilia ardowniana, n. var.; DAUTZENBERG & FISCHER (171).
Coryna biarmata, n. var.; KOBELT in ROSSMÄSSLER (495).

- Cassidula labrella, paludosa*, n. subsp.; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 718.
- Chilina fuegiensis*, Tierra del Fuego; SMITH, P. Malac. Soc. London vi, p. 339, fig.: n. sp.
- Celostele cylindrata*, Cilicia; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905, p. 109, fig.: n. sp.
- Cyclolimnæa*, n. sect. of *Limnæa*, type *L. involuta*, Harvey; DALL (165), p. 64.
- Gundlachia lucasi*, New Zealand; SUTER, Tr. N. Zealand Inst. xxxvii, p. 250, fig.: *G. neozelanica*, New Zealand; SUTER, t. c. p. 258: n. spp.
- Haldemanina*, n. sect. of *Planorbula*, type *Planorbis wheatleyi*, Lea; DALL (165), p. 97.
- Inidora*, review of New Zealand species, with n. subsp. of *I. lirata*, Woods; SUTER, Tr. N. Zealand Inst. xxxvii, p. 267: *I. tabulata, lirata, radula*; SUTER, t. c. p. 252.
- Laimodonta bronni*, n. var.; DAUTZENBERG & FISCHER (171).
- Leuconopsis victoriae*, Victoria, p. 11, *tatei*, South Australia, p. 12; GATLIFF, Victorian Natural. xxii, figg.: n. spp.
- Limnæa*, critical notes on some American forms; BAKER (20): Genitalia; BAKER (19): *L. stagnalis*, n. var.; BAKER, Nautilus xviii, p. 142: *L. stagnalis*, umbilicate var.; HUTTON, J. Conch. xi, p. 144: *L. parva*, Lea, notes on; BAKER, Nautilus xix, p. 52: *L. parva*, Caziot, is preoccupied; COCKERELL, J. Malac. xii, p. 89: *L. undusumæ*, Martens, n. var.; GERMAIN, Bull. Mus. Paris x, p. 467: *L. peregra* and *ovata*, notes; BROCKMEIER (66): *L. nimoulensis*, figd.; ROCHEBRUNE & GERMAIN (493).
- Limnæa falconica*, p. 43, *guehardi*, p. 44, S. France; CAZIOT, Bull. Soc. zool. France xxx, figg.: *L. blaiseti*, Tonkin; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 116, fig.: *L. petersi*, p. 66, Alaska, *preblei*, Alaska and Manitoba, p. 70, (*Stagnicola*?) *perpolita*, p. 78, Alaska, (*S.*) *anticostiana*, p. 79, Anticosti I.; DALL (165), figg.: *L. sterkii*, Ohio; BAKER, Nautilus xix, p. 51: *L. ovascoensis*, New York, *bryanti*, California; BAKER, op. cit. xviii, p. 141: n. spp.
- Paraspira*, n. sect. of *Tropidiscus*, type *Planorbis rotundatus*, Poiret; DALL (165), p. 86.
- Physa fontinalis*, embryology; WIERZEJSKI (642): *P. rhomboidea*, Crandall, name is preoccupied; COCKERELL, Nautilus xix, p. 96.
- Physa layardi*, Vate I.; ANCEY, Nautilus xix, p. 44: n. sp.
- Physopsis didieri*, figd.; ROCHEBRUNE & GERMAIN (493).
- Pierosoma*, n. sect. of *Helisoma* for *Planorbis trivoltis*, Say; DALL (165), p. 81.
- Planorbis campanulatus, exacuus*, n. varr.; DALL (165): *P. bozasi*, figd.; ROCHEBRUNE & GERMAIN (493): *P. abyssinicus*, n. var.; GERMAIN, Bull. Mus. Paris x, p. 353.
- Planorbis tetragonostoma*, Lake Tchad; GERMAIN, Bull. Mus. Paris x, p. 467: *P. lamyi*, Tanganyika; GERMAIN, op. cit. xi, p. 256: n. spp.
- Planorbula tchadiensis*, Lake Tchad; GERMAIN, op. cit. x, p. 468: n. sp.
- Plecotrema punctigerum*, Ad., figd.; DAUTZENBERG & FISCHER (171).
- Plecotrema blaiseti*, Tonkin; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 112, fig.: n. sp.
- Seymentina (Planorbula) christyi*, Alaska and Manitoba; DALL (165), p. 99, fig.: *S. chevalieri*, Lake Tchad; GERMAIN, Bull. Mus. Paris x, p. 468: n. spp.
- Torquus*, n. sect. of *Gyraulus*, type *Planorbis parvus*, Say; DALL (165), p. 86.
- Zospeum venetum*, p. 3, *lyratum*, p. 4, Italy; POLLONERA, Proteus iii, figg.: n. spp.

SIPHONARIIDÆ and AMPHIBOLIDÆ.

- Ampullarina minuta*, Woods, is young of *A. fragilis*; MAY, P. Soc. Tasmania 1902, p. 113.
Siphonaria, homing; WILLCOX (644).

OPISTHOBRANCHIATA.

NUDIBRANCHIATA.

- Illustrations of, and notes on, South Australian species; BASEDOW & HEDLEY (30).
 Nudibranchs of the Siboga Expedition, with anatomy, &c.; BERGH (41).
 Critical notes on Pacific Nudibranchs; ELIOT (199).
 Notes on Californian species; MACFARLAND (376).
 Nudibranchs, maturation; SMALLWOOD (536).
Acanthodoris metulifera, Tasmania; BERGH (42), p. 98, fig. : *A. rhodoceras*, California; COCKERELL & ELIOT, J. Malac. xii, p. 38, fig. : *A. hudsoni*, p. 51, *brunnea*, p. 52, California; MACFARLAND, P. Soc. Washington xviii : **n. spp.**
Egires villosus, Ceylon; FARRAN (204), p. 346, fig. : *Æ. albopunctatus*, California; MACFARLAND, P. Soc. Washington xviii, p. 45 : **n. spp.**
Albania (?) *verconis*, South Australia; BASEDOW & HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 154, fig. : **n. sp.**
Ancula pacifica, California; MACFARLAND, P. Soc. Washington xviii, p. 53 : **n. sp.**
Anisodoris siboga, p. 96, (?) *timorensis*, p. 97, East Indies; BERGH (41), figg. : **n. spp.**
Aphelodoris luctuosa, Tasmania, p. 75, *purpurea*, New Zealand, p. 77, *pallida*, Pacific Ocean, p. 78; BERGH (42), figg. : **n. spp.**
Aporodoris (?) *rubra*, East Indies; BERGH (41), p. 94, fig. : **n. sp.**
Archidoris staminea, South Australia; BASEDOW & HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 151, fig. : **n. sp.**
Cadlina marginata, *flavomaculata*, California; MACFARLAND, P. Soc. Washington xviii, p. 43 : **n. spp.**
Carminodoris blandula, East Indies; BERGH (41), p. 111, fig. : **n. sp.**
Cusella rubra, Flores; BERGH (41), p. 163, fig. : **n. sp.**
Cerphalopyge, **n. gen.** for *Phyllirhoe trematoides*, Chun; HANEL, Zool. Jahrb. Syst. xxi, p. 451.
Ceratosoma bicorne, East Indies; BERGH (41), p. 167, fig. : *C. adelaidæ*, S. Australia; BASEDOW & HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 156, fig. : **n. spp.**
Cerberilla ambonensis, Amboyna; BERGH (41), p. 225, fig. : **n. sp.**
Chromodoridella, **n. gen.** for *C. mirabilis*, **n. sp.** Natal; ELIOT, P. Malac. Soc. London vi, p. 233.
Chromodoris universaliatis, Cockerell, and *tenuilinearis*, Farran, equal *C. californiensis*, Bergh, and *nigrostriata*, Eliot; COCKERELL & ELIOT, J. Malac. xii, p. 37.
Chromodoris tenuilinearis, Ceylon; FARRAN (204), p. 342, fig. : *C. tasmaniensis*, Tasmania, p. 69, *aequalia*, California, p. 70, *figurata*, p. 71, *atopa*, p. 73, New Zealand; BERGH (42), figg. : *C. flammulata*, p. 151, *marpessa*, p. 152, *venusta*, *ophthalmica*, p. 153, *nodulosa*, p. 154, *pantherina*, p. 155, *papulosa*, p. 156, *siboga*, *inopinata*, p. 157, *lactea*, p. 159, *clitonota*, p. 160, *virgata*, p. 161, East Indies; BERGH (41), figg. : **n. spp.**
Cratena cucullata, Gisser I.; BERGH (41), p. 230, fig. : **n. sp.**

- Diaulula* (?) *gigantea*, p. 119, Roma I., (?) *rubra*, p. 120, Sula-Besi ; BERGH (41), figg. : n. spp.
- Dirona* (McFarland MS), n. gen. for *D. picta*, *albolineata*, McFarland ; COCKERELL & ELIOT, J. Malac. xii, p. 45.
- Discodoris labifera*, Abr., note on ; FARRAN (204), p. 335.
- Discodoris heathi*, California ; MACFARLAND, P. Soc. Washington xviii, p. 39 : *D. (?) sibogæ* [= *D. rubra*, Bergh, post, p. 248], p. 104, (?) *liturata*, p. 106, (?) *lutescens*, p. 107, (?) *versicolor*, p. 108, East Indies ; BERGH (41), figg. : n. spp.
- Doridopsis*, notes on species ; ELIOT (200).
- Doridopsis reticulata* ; COCKERELL & ELIOT, J. Malac. xii, p. 41, fig. : n. sp.
- Doriopsis* (?) *lavis*, off Timor ; BERGH (41), p. 179, fig. : n. sp.
- Doriopsis fulva*, California ; MACFARLAND, P. Soc. Washington xviii, p. 45 : *D. punctatella*, Pacific Ocean ; BERGH (42), p. 87, fig. : *D. erubescens*, p. 173, *amæna*, p. 174, *flaccida*, *weberi*, p. 175, East Indies ; BERGH (41), figg. : n. spp.
- Doto africana*, E. Africa ; ELIOT, P. Zool. Soc. London 1904, ii, p. 285 : n. sp.
- Elysia marginata*, Pease, figd. ; ELIOT (200).
- Elysia dubia*, E. Africa ; ELIOT, P. Zool. Soc. London 1904, ii, p. 297, fig. : *E. thysanopoda*, Kei Is., p. 84, (?) *lineolata*, Saleyer, p. 85, *haingniana*, Haingnisi, p. 87 ; BERGH (41), figg. : n. spp.
- Ennoia longicirra*, Aru Is. ; BERGH (41), p. 234, fig. : n. sp.
- Facelina lineata*, E. Africa ; ELIOT, P. Zool. Soc. London 1904, ii, p. 288, fig. : n. sp.
- Flabellina* (?) *macassarana*, Macassar ; BERGH (41), p. 237, fig. : n. sp.
- Galvina producta*, Ceylon ; FARRAN (204), p. 332, fig. : n. sp.
- Geitodoris planata*, Alder & Hancock, note on ; ELIOT (196).
- Geitodoris mollina*, Caribbean Sea ; BERGH (42), p. 68, fig. : n. sp.
- Goniodoris punctata*, New Zealand ; BERGH (42), p. 91, fig. : n. sp.
- Halgerda punctata*, Ceylon ; FARRAN (204), p. 339, fig. : *H. graphica*, South Australia ; BASEDOW & HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 152, fig. : *H. elegans*, Gunong-Api, p. 124, *rubra*, Banda, p. 126, *inornata*, Karakelang Is., p. 128 ; BERGH (41), figg. : n. spp.
- Halla indecora*, Aru Is. ; BERGH (41), p. 116, fig. : n. sp.
- Hero formosa*, n. var. ; ELIOT, P. Malac. Soc. London vi, p. 239.
- Hervia ceylonica*, Ceylon ; FARRAN (204), p. 331, fig. : *H. sibogæ*, Kangean I. ; BERGH (41), p. 231, fig. : *H. lineata*, E. Africa ; ELIOT, P. Zool. Soc. London 1904, ii, p. 286, fig. : n. spp.
- Hexabranchus*, notes on species ; ELIOT (200).
- Hexabranchus punctatus*, Borneo ; BERGH (41), p. 92, fig. : n. sp.
- Hopkinsia*, n. gen. for *H. rosacea*, n. sp., California ; MACFARLAND, P. Soc. Washington xviii, p. 53.
- Hypselodoris epicuria*, South Australia ; BASEDOW & HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 153, fig. : n. sp.
- Janolus ceruleopictus*, California ; COCKERELL & ELIOT, J. Malac. xii, p. 48, fig. : n. sp.
- Kalinga ornata*, A. & H., *radula* ; FARRAN (204), p. 347.
- Laila*, n. gen. for *L. cockerelli*, n. sp., California ; MACFARLAND, P. Soc. Washington xviii, p. 46.
- Linguella cinerea*, Ceylon ; FARRAN (204), p. 334, fig. : n. sp.
- Marioniu distincta*, p. 206, *tessellata*, p. 207, East Indies ; BERGH (41), figg. : n. spp.
- Monteraina*, n. gen. for *M. nobilis*, n. sp., California ; MACFARLAND, P. Soc. Washington xviii, p. 38.
- Myrrhine*, n. gen., p. 226, for *M. longicirra*, n. sp., p. 227, Saleyer ; BERGH (41), fig.
- Nembrotha rubropapulosa*, p. 198, *amitina*, (?) *rubroocellata*, p. 201, East

- Indies; BERGH (41), figg.: *N. (?) verconis*, South Australia; BASEDOW & HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 158, fig.: *n. spp.*
- Nirva*, *n. gen.* for *Doris (?) brockii*, Bergh; BERGH (41), p. 117.
- Notæolidea*, *n. gen.* for *N. gigas*, p. 520, *purpurea*, p. 524, *n. spp.*, S. Orkneys; ELIOT, Tr. R. Soc. Edinb. xli, figg.
- Orodoris striata*, E. Africa; ELIOT, P. Zool. Soc. London 1904, ii, p. 269: *n. sp.*
- Peltodoris rubescens*, Kabaena I.; BERGH (41), p. 134, fig.: *n. sp.*
- Phestilla siboga*, Rotte I.; BERGH (41), p. 232, fig.: *n. sp.*
- Phidiana tenuis*, E. Africa; ELIOT, P. Zool. Soc. London 1904, ii, p. 287: *n. sp.*
- Phyllidia*, notes on species; ELIOT (200).
- Phyllidia celestis*, Saleyer; BERGH (41), p. 182, fig.: *n. sp.*
- Phyllobranchopsis*, *n. gen.* for *P. enteromorphae*, *n. sp.*, California; COCKERELL & ELIOT, J. Malac. xii, p. 52, fig.
- Placobranchus ocellatus*, Van Hasselt, figd.; ELIOT (200).
- Platydoris inframaculata*, note on; FARRAN (204), p. 336.
- Platydoris townsendi*, Maskat; ELIOT, J. Conch. xi, p. 253, fig.: *P. flammulata*, Borneo, p. 138, *sanguinea*, Saleyer, p. 139; BERGH (41), figg.: *P. herdmanni*, p. 337, (?) *spinulosa*, p. 338, Ceylon; FARRAN (204), figg.: *n. spp.*
- Pleuroleura pallida*, Kei Is., *suluensis*, Sulu Archipelago; BERGH (41), p. 212, figg.: *n. spp.*
- Pleurophyllidia formosa*, Kel., notes on; FARRAN (204), p. 333.
- Pleurophyllidia rosea*, p. 213, *stenidia*, p. 214, East Indies; BERGH (41), figg.: *n. spp.*
- Polycera quadrilineata* (Müller), genital system; POHL (468).
- Polycera atra*, California; MACFARLAND, P. Soc. Washington xviii, p. 50: *n. sp.*
- Rostanga pulchra*, California; MACFARLAND, t. c. p. 40: *n. sp.*
- Spurilla chromosoma*, California; COCKERELL & ELIOT, J. Malac. xii, p. 51: *S. orientalis*, Kei I.; BERGH (41), p. 223, fig.: *n. spp.*
- Stiliger varians*, p. 290, *irregularis*, p. 291, East Africa; ELIOT, P. Zool. Soc. London 1904, ii, figg.: *n. spp.*
- Theracera maculata*, Karachi; ELIOT, J. Conch. xi, p. 241: *n. sp.*
- Thordisa (?) caudata*, Ceylon; FARRAN (204), p. 340, fig.: *T. tristis*, Aru Is., p. 121, *hilaris*, Saleyer, p. 122, (?) *maculosa*, Borneo, p. 123; BERGH (41), figg.: *n. spp.*
- Timorella*, *n. gen.* for *T. perplexa*, *n. sp.*, Timor; BERGH (41), p. 241, fig.
- Trevelyana rubra*, *rubromaculata*, p. 189, *rubropapulosa*, p. 191, (?) *defensa*, p. 192, East Indies; BERGH (41), figg.: *n. spp.*
- Triopa longicornis*, (?) *tristis*, East Indies; BERGH (41), p. 186, figg.: *n. spp.*
- Triopha maculata*, p. 49, *grandis*, p. 50, California; MACFARLAND, P. Soc. Washington xviii: *n. spp.*
- Trippa affinis*, Savu; BERGH (41), p. 131, fig.: *n. sp.*
- Tritonia pallida*, Stimpson, note on; ELIOT, Tr. R. Soc. Edinb. xli, p. 528.
- Tritonia olivacea*, p. 204, *irrorata*, p. 205, East Indies; BERGH (41), figg.: *T. appendiculata*, S. Orkneys; ELIOT, Tr. R. Soc. Edinb. xlii, p. 526, fig.: *n. spp.*
- Tritoniopsis*, *n. gen.* for *T. brucei*, *n. sp.*, Gough I.; ELIOT, t. c. p. 530, fig.

TECTIBRANCHIATA (including PTEROPODA).

- Tectibranchs of the Siboga Expedition, with anatomy, etc.; BERGH (41).
- Anatomy and distribution of Pteropods; MEISENHEIMER (394).
- Distribution of Pteropods; MEISENHEIMER, Zool. Anz. xxix, pp. 155-163, 1 map.

- Acera bullata*, biology; LEGENDRE (355).
Aclesia varicolor, Kur Is., p. 21, *pusilla*, Paternoster Is., p. 22; BERGH (41), figg.: n. spp.
Actæon ringei, Le Maire Straits, Patagonia; STREBEL, Zool. Jahrb. Syst. xxii, p. 576, fig.: n. sp.
Aplysia, physiology of stomach-muscles; BRÜCKE (71): *A. cornigera*, Sby., p. 349, *elongata*, Pease, p. 350, notes on; FARRAN (204).
Aplysia intermedia, Ceylon; FARRAN (204), p. 351, fig.: *A. scripta*, Amboyna, p. 4, *atromarginata*, p. 8, East Indies, *sibogæ*, p. 9, Timor, *vezans*, p. 10, Amboyna, *velifer*, p. 11, Flores; BERGH (41), figg.: n. spp.
Aplysiella mollis, Ceylon; FARRAN (204), p. 353, fig.: *A. pasirana*, East Indies, p. 24, *viridis*, Paternoster Is., p. 25; BERGH (41), figg.: n. spp.
Berthella borneensis, Borneo, p. 69, *minor*, p. 70, Sulu Archipelago, *in-operta*, Damar Is., p. 73; BERGH (41), figg.: n. spp.
Bulla gallica, France (Atlantic and Mediterranean), p. 42, *subquadrata*, Monta., Mediterranean, p. 43; LOCARD, Ann. Soc. Agric. Lyon ii: n. spp.
Chelidonura velutina, p. 43, *amæna*, p. 45, Saleyer; BERGH (41), figg.: n. spp.
Cresseis caliciformis, S. Indian Ocean; MEISENHEIMER (394), p. 308, fig.: n. sp.
Cylichna striata, Hutton, note and fig.; MURDOCH, Tr. N. Zealand Inst. xxvii, p. 218: *C. atkinsoni*, Woods, figured; MAY, P. Soc. Tasmania 1902, p. 113.
Cylichna tenuis, New South Wales; HEDLEY, Rec. Austral Mus. vi, p. 54, fig.: n. sp.
Dolabrifera maillardi, Desh., p. 353, *scapula*, Mart., p. 354, notes on; FARRAN (204).
Dolabrifera marginata, Ceylon; FARRAN (204), p. 354, fig.: n. sp.
Frocymbulia, n. gen., p. 13, for *P. valdiviæ*, n. sp., p. 14, N. of New Amsterdam Is.; MEISENHEIMER (394), fig.
Gastropæron sibogæ, Paternoster Is.; BERGH (41), p. 32, fig.: n. sp.
Halopsyche gaudichaudi, anatomy; MEISENHEIMER (394).
Limacina contorta, Monta., figured; SYKES (586).
Notarchus ceylonicus, Ceylon; FARRAN (204), p. 355, fig.: n. sp.
Notobranchæa valdiviæ, Indian Ocean; MEISENHEIMER (394), p. 55, fig.: n. sp.
Ophthalmide, new group for *Phanerophthalmus*, etc.; BERGH (41).
Oscaniella albiguttata, p. 58, *lugubris*, p. 60, *purpurascens*, p. 62, *dubia*, p. 63, *inermis*, p. 64, *modesta*, p. 65, East Indies; BERGH (41), figg.: n. spp.
Oscanius weberi, Saleyer, etc., p. 53, *sibogæ*, p. 55, *pupuligerus*, Kei Is., p. 56; BERGH (41), figg.: n. spp.
Phanerophthalmus pauper, East Indies; BERGH (41), p. 37, fig.: n. sp.
Philine aperta, eggs; SCHIMKEWITSCH (505, 506): Three European spp. figured, with *P. talismani*, n. n. for *P. striatula*, Locard non Jeffreys; SYKES (586).
Philine rubra, Taam Is., p. 29, *elegans*, East Indies, p. 31; BERGH (41), figg.: n. spp.
Phyllaplysia inornata, Kur Is.; BERGH (41), p. 27, fig.: *P. albomaculata*, p. 351, *pollucida*, p. 352, Ceylon; FARRAN (204), figg.: n. spp.
Pleurobranchæa brocki, Bergh, notes on; FARRAN (204), p. 355.
Pleurobranchæa morula, Paternoster Is.; BERGH (41), p. 48, fig.: n. sp.
Pleurobranchus citrinus, Rupp. & Leuck., note on; FARRAN (204), p. 356.
Pleurobranchus hornelli, Ceylon; FARRAN (204), p. 357, fig.: *P. griseus*, p. 66, *lutipes*, p. 67, East Indies; BERGH (41), figg.: n. spp.

- Pneumoderma eurycotylum*, Gulf of Guinea ; MEISENHEDMER (394), p. 51, fig. : **n. sp.**
Pneumodermopsis macrochira, S. Atlantic and S. Indian Oceans ; MEISENHEIMER (394), p. 47, fig. : **n. sp.**
Retusa serendibensis, Ceylon ; PRESTON, J. Malac. xii, p. 1, fig. : **n. sp.**
Schizobranchium, **n. gen.**, p. 51, for *S. polycotylum*, **n. sp.**, p. 52, S. Indian Ocean ; MEISENHEIMER (394), fig.
Thliptodon diaphanus, Gulf of Guinea and E. Indian Ocean ; MEISENHEIMER (394), p. 59, fig. : **n. sp.**
Tornatina detruncata, Monts., Mediterranean ; LOCARD, Ann. Soc. Agric. Lyon ii, p. 60 : *T. tenuistriata*, Ceylon ; PRESTON, J. Malac. xii, p. 1, fig. : *T. (Utriculus) paessleri*, Patagonia ; STREBEL, Zool. Jahrb. Syst. xii, p. 577, fig. : **n. spp.**

NUCLEOBRANCHIATA.

Heteropoda, heart and excretory organ ; RYWOSCH (500).

PROSOBRANCHIATA.

PECTINIBRANCHIATA.

TOXOGLOSSA.

TEREBRIDÆ, CONIDÆ, PLEUROTOMIDÆ, and CANCELLARIIDÆ.

- Admete woodworthi*, California ; DALL, Nautilus xviii, p. 123 : *A. magellanica*, Magellan Region ; STREBEL, Zool. Jahrb. Syst. xii, p. 594, fig. : **n. spp.**
Bathybela, **n. sect.** of *Bela* for *Thesbia nudator*, Loc., etc. ; KOBELT (340), p. 276.
Bathyclionella, **n. sect.** of *Bela* for *Pleurotoma quadruplex*, Watson ; KOBELT (340), p. 279.
Bathytoma surcinula, New South Wales ; HEDLEY, Rec. Austral. Mus. vi, p. 53, fig. : **n. sp.**
Bela angusteplicata, p. 583, *lateplicata*, p. 584, *gasella*, p. 585, *magellanica*, p. 586, *michaelseni*, p. 587, *paessleri*, p. 588, *martensi*, p. 589, Magellan Region ; STREBEL, Zool. Jahrb. Syst. xii, figg. : **n. spp.**
Cancellaria exquisita [= *wilmeri*, Sby.], Ceylon ; PRESTON, J. Malac. xli, p. 3, fig. : **n. sp.**
Clathurellu epentroma, New Zealand ; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 219, fig. : **n. sp.**
Clavatula gaylordæ, Ceylon ; PRESTON, J. Malac. xii, p. 2, fig. : **n. sp.**
Elionella semicostata (Kien.), anatomy ; BERGH (42), p. 102.
Conus fuscolineatus, Sierra Leone ; SOWERBY, P. Malac. Soc. London vi, p. 282, fig. : **n. sp.**
Drillia consociata, **n. var.** ; SYKES, P. Malac. Soc. London vi, p. 318, fig.
Drillia lyallensis, New Zealand ; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 221, fig. : *D. levanderi*, Massowa ; STURANT, Nachrbl. Deutsch. malak. Ges. 1905, p. 135, fig. : *D. janseni*, p. 580, *murdorfi*, p. 582, *kophumeli*, p. 582, Magellan Region ; STREBEL, Zool. Jahrb. Syst. xii, figg. : **n. spp.**
Genota rastra, West Africa ; SYKES, P. Malac. Soc. London vi, p. 317, fig. : **n. sp.**
Mangiliu lamarchi, **n. n.** for *Pleurotoma plicata*, Lam. ; PEZANT, Feuille Natural. xxv, p. 89.

- Mangilia perattenuata*, California; DALL, Nautilus xviii, p. 123: *M. emina*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 53, fig.: *M. mangieri*, (*Glyphostoma*) *casioti*, (*G.*) *ecolorata*, (*Clathurella*) *curnicolor*, p. 2, (*Cythara*) *brunneolineata*, p. 3, Ceylon; PRESTON, J. Malac. xii, figg: **n. spp.**
- Mitromorpha suteri*, New Zealand; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 220, fig.: **n. sp.**
- Ohlinia*, **n. gen.** for *Admete* (?) *linnaeaformis*, Smith; STREBEL, Zool. Jahrb. Syst. xxii, p. 597, fig.
- Pleurobela*, **n. sect.** of *Belomitra* for *B. spelta* (Monta.), Locard; KOBELT (340), p. 301.
- Pleurotomidae* of European Seas reviewed; KOBELT (340): New Zealand species; SUTER (572).
- P. weldiana*, Woods, equals *Drillia fucata*, Rve.; HEDLEY, P. Soc. Tasmania 1902, p. 77.
- Pusionella remorata*, West Africa; SYKES, P. Malac. Soc. London vi, p. 317, fig.: **n. sp.**
- Savatieria dubia*, p. 641, *pfefferi*, p. 642, *molinae*, p. 644, *areolata*, p. 645, Magellan Region; STREBEL, Zool. Jahrb. Syst. xxii, figg.: **n. spp.**
- Surcula buchanani*, Hutton, *trailli*, Hutton, notes on names and synonyms; SUTER, P. Malac. Soc. London vi, p. 200.
- Terebra hedleyana*, **n. n.** for *Terebra hedleyi*, Pils., preocc.; PILSBRY, P. Ac. Philad. 1905, p. 101.
- Theobia michaelsoni*, p. 590, *filostriata*, p. 591, *ohlini*, p. 592, Magellan Region; STREBEL, Zool. Jahrb. Syst. xxii, figg.: **n. spp.**
- Villiersia*, Monta., renamed *Villiersiella*, q. v.
- Villiersiella*, apparently **n. n.** for *Villiersia*, Monta. nec D'Orb.; KOBELT (340), p. 381.

RACHIGLOSSA.

OLIVIDÆ, MARGINELLIDÆ, VOLUTIDÆ, and MITRIDÆ.

- Erato albescens*, California; DALL, Nautilus xviii, p. 124: **n. sp.**
- Marginella tasmanica*, *cypræoides*, Woods, figd.; MAY, P. Soc. Tasmania 1902, p. 109.
- Marginella imperatrix*, *keppeli*, p. 315, West Africa, *repentina*, Mayotte, *binotata*, Indian Ocean (? Ceylon), *hesperia*, off Cape St Vincent, p. 316; SYKES, P. Malac. Soc. London vi, figg.: **n. spp.**
- Mitra* *piercing* *Fistulana*; SMITH (538): Some spp. figd.; BÜLOW (82): *M. tasmanica*, Woods, figd.; MAY, P. Soc. Tasmania 1902, p. 109.
- Oliva peruviana*, anatomy; HALLER (260): *O. tigriddella*, Duclos, note on; BRIDGMAN (62): *O. oryza*, Lam., note on; BRIDGMAN (61).
- Voluta*, some spp. figd.; BÜLOW (82).
- Vulpecula* (*Pusia*) *hedleyi*, New Zealand; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 228, fig.: **n. sp.**

FASCIOLARIIDÆ, TURBINELLIDÆ, BUCCINIDÆ, NASSIDÆ, COLUMBELLIDÆ, MURICIDÆ, and CORALLIOPHILIDÆ.

- Anomacme*, new group of *Euthria*, for *E. smithi*, **n. sp.**; STREBEL, Zool. Jahrb. Syst. xxii, p. 633.
- +*Aptycholathyrus*, **n. gen.** for *A. lirofunatus*, **n. sp.**, Eocene, Cotentin; COSSMANN & PISSARRO, Bull. Soc. geol. Normand. xxiv, p. 44.
- Buccinum*, some spp. figd., with notes and **n. varr.**; HÄGG (257): *B. chishimanum*, figd.; PILSBRY, P. Ac. Philad. 1905, p. 103.
- Buccinum bromsi*, Spitzbergen; HÄGG, Arkiv Zool. ii, No. 13, p. 57, fig.: *B. unicum*, Japan; PILSBRY, P. Ac. Philad. 1905, p. 102, fig.: **n. spp.**

- Columbella huttoni*, Suter, n. n. for *Lachesis sulcata*, Hutton, preocc.; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 223: *C. pardalina*, n. subsp.; PILSBRY, P. Ac. Philad. 1905, p. 102: *C. legrandi*, Woods, figd.; MAY, P. Soc. Tasmania 1902, p. 110.
- Columbella perlævis*, (*Atilia*) *macandrewi*, ? Ceylon; SOWERBY, Ann. Nat. Hist. xvi, p. 189: *C. (Mitrella) multistriata*, Ceylon; PRESTON, J. Malac. xii, p. 3, fig.: *C. (Seminella) decorata*, p. 635, *paessleri*, *melvillei*, p. 637, Magellan Region; STREBEL, Zool. Jahrb. Syst. xxii, figg.: *C. transitans*, *parillus*, p. 224, *saxatilis*, p. 225, New Zealand; MURDOCH, Tr. N. Zealand Inst. xxxvii, figg.: n. spp.
- Euthria ringei*, p. 619, *microelseni*, p. 621, *janseni*, p. 622, *mulachi*, p. 623, *paessleri*, p. 624, *philippii*, p. 626, *martensi*, p. 630, *agnesia*, p. 631, *kobelti*, p. 632, *smithi*, p. 633, Magellan Region; STREBEL, Zool. Jahrb. Syst. xxii, figg.: n. spp.
- Fasciolaria tulipa*, new group, cannibalism and larval excretion-organs; GLASER (238).
- Glypt euthria*, new group of *Euthria*, for *E. meridionalis*, Smith, etc.; STREBEL, Zool. Jahrb. Syst. xxii, p. 627.
- Latiaxis kieneri*, Philippines; HIDALGO (286), p. 3: n. sp.
- Leptoconchus* sp., Marshall Is.; SCHNEE (507).
- Maculotriton bracteatus*, var. figd.; PILSBRY, P. Ac. Philad. 1905, p. 103.
- Megalatractus aruanus*, notes on; HEDLEY, Rec. Austral. Mus. vi, p. 98.
- Murex (Phyllonotus) santarosana*, California; DALL, Nautilus xix, p. 14: n. sp.
- Nassa obsoleta*, life history, etc.; DIMON (183).
- Pareuthria*, n. group of *Euthria*, for *E. cornea*, etc.; STREBEL, Zool. Jahrb. Syst. xxii, p. 600.
- Purpura*, earliest use of name; DALL, P. Soc. Washington xviii, p. 189: Nutrition of embryo; PELSENER (443).
- Ricinula lischkei*, Red Sea; HIDALGO (286), p. 2: n. sp.
- Sycotypus*, physiology of alimentary canal; MENDEL & BRADLEY (401, 402).
- Tritonidea lamarecki*, n. n. for *Fusus polygonus*, Lam. non Gmel.; PEZANT, Feuille Natural. xxxv, p. 88.
- Tritonidea (Cantharus) fuscopicta*, ? Ceylon; SOWERBY, Ann. Nat. Hist. xvi, p. 191: n. sp.
- Trophon (Kalydon) curta*, New Zealand; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 228, fig.: n. sp.
- Uvella gouldi* (Smith), figd.; PILSBRY, P. Ac. Philad. 1905, p. 104.

TÆNIOGLOSSA.

LOTORIIDÆ, CASSIDIDÆ, DOLIIDÆ, CYPREIDÆ, STROMBIDÆ,
APORRHAIIDÆ, and STRUTHIOLARIIDÆ.

- Aquillus nobilis*, Cour., figd.; BÜLOW (82).
- Cusmaria*, notes on genus and species; MELVILL (396).
- Cassidaria rugosa*, anatomy; REYNELL (482): *C. echinophora*, variation; VINASSA DE REGNY (613).
- Cyprea*, notes on, with n. varr.; VATESSIERE (604, 605): Four n. varr.; MELVILL (397): Several n. varr.; ROUS (497): *C. miliaris*, *capensis*, n. varr.; ROUS, Nautilus xix, p. 29.
- † *Digitolabrum*, n. sect. of *Dientomochilus*, type *Rostellarius princeps*, Vass.; COSHMANN, Essais Pal. Comp. vi, p. 40 [om. 1904].
- Dolium perdix* (L.), anatomy; BERGH (42), p. 105.
- Lotoriidæ*, notes on nomenclature; DOLLFUS (187).
- Rostellaria crispata* (Sow.), anatomy; BERGH (42), p. 107: *R. delicatula*, variation and distribution; MELVILL & STANDEN (399).

Strombus pugilis, sexual dimorphism; COLTON (130): Notes on animal, habits, etc.; COLTON (131): *S. pugilis*, n. var.; FLICK, Nautilus xix, p. 32.

CERITHIIDÆ, PLANAXIDÆ, TRICHOTROPIDIDÆ, and CÆCIDÆ.

Bittium michaelsoni, Magellan Region; STREBEL, Zool. Jahrb. Syst. xxii, p. 655, fig.: n. sp.

Cæcidæ; DISTASO (184).

Cerithiopsis halligani, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 51, fig.: *C. abjecta*, *brunneoflavida*, *orientalis*, Ceylon; PRESTON, J. Malac. xii, p. 4, figg.: *C. sarissa*, New Zealand; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 221, fig.: n. spp.

Cerithium tuberculatum, L., is really a *Potamides*; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 130.

Cerithium tomlini, Ceylon; PRESTON, J. Malac. xii, p. 3, fig.: *C. thaenumi*, *hawaiiense*, Hawaiian Is.; PILSBRY & VANATTA, P. Ac. Philad. 1905, p. 576 [Figd.; t. c. p. 787]: *C. voyi*, p. 787, Caroline and Hawaiian Is., *nesioticum*, Hawaiian Is., &c., p. 789; PILSBRY & VANATTA, t. c. figg.: n. spp.

+*Horizostoma*, n. subgen. of *Cerithium* for *C. heterostoma*, Gein.; DENINGER, Beitr. Pal. Oesterr.-Ung. xviii, p. 15.

+*Irania*, n. gen. for *Vicarya fusiformis*, Hislop, &c.; DOUVILLÉ (192), p. 319.

Planaxis abbreviata, n. subsp.; PILSBRY, P. Ac. Philad. 1905, p. 105.

Protoma pulchra, Sierra Leone; SOWERBY, P. Malac. Soc. London vi, p. 281, fig.: n. sp.

Pseudoparastrophia, n. gen., type *P. levigata*, n. sp., Mediterranean; DISTASO, Zool. Jahrb. Syst. xxii, p. 434, fig.

Pseudovertagus, n. sect. of *Cerithium*, type *C. aluco*, L.; VIGNAL, Bull. Mus. Paris x, p. 358.

Pyrazus, notes on spp.; VIGNAL (611).

Trichotropis tenuis, Sm., figd.; HÄGG (257).

MELANIIDÆ, PSEUDOMELANIIDÆ, PLEUROCIDÆ, LITTORINIDÆ, and FOSSARIDÆ.

Fossarina lineata, ?Ceylon; SOWERBY, Ann. Nat. Hist. xvi, p. 188: n. sp.

Fossarus bulimoides, Woods, is young of *Adelactoon casta*, Ad.; MAY, P. Soc. Tasmania 1902, p. 111.

Fossarus oblongus, ?Ceylon; SOWERBY, Ann. Nat. Hist. xvi, p. 188: n. sp.

Goniobasis columbiensis, British Columbia; WHITEAVES, Nautilus xix, p. 61, fig.: n. sp.

Littorina, vitality; SMITH, P. Malac. Soc. London vi, p. 272.

Melania tuberculata, Müll., note on synonymy; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 141.

Melania gottchei, p. 28, *succincta*, p. 28, *multisculpta*, p. 29, *forticosta*, p. 31, *tegulata*, p. 32, *nodiperda*, p. 33, *nodifila*, p. 38, *graniperda*, p. 39, *coreana*, p. 40, *multicincta*, p. 44, *extensa*, p. 45, *paucicincta*, p. 46, *ovulum*, p. 47, *globus*, p. 48, Martens, Korea, figd.; MARTENS, Zool. Jahrb. Suppl. viii.

Melanopsis hungarica, notes on; KORMOS (345).

Paramelania nassa, n. var.; GERMAIN, Bull. Mus. Paris xi, p. 259.

+*Rhabdostropha*, n. subgen. of *Loxonema* for *L. grindrodii*, *pseudofasciatum*, n. spp., Silurian; DONALD, Quart. J. Geol. Soc. lxi, p. 565.

†*Turristylus*, n. subgen. of *Trypanostylus* for *T. triadicus*, Kittl, &c. ;
BLASCHKE, Beitr. Pal. Oesterr.-Ung. xvii, p. 205.

SOLARIIDÆ, RISSOIDÆ, HYDROBIIDÆ, VIVIPARIDÆ,
VALVATIDÆ, AMPULLARIIDÆ, and ASSIMINEIDÆ.

- Alaba oldroydi*, California ; DALL, Nautilus xix, p. 15 : n. sp.
Ampullaria gigas, account of ; BRÜNING (73, 74).
Ampullaria chevalieri, Chari Region ; GERMAIN, Bull. Mus. Paris x, p. 469 :
n. sp.
Assiminea brevicula, Pfr., figd. ; DAUTZENBERG & FISCHER, J. Conchyl. liii,
p. 163.
Assiminea francoisi, p. 164, *interrupta*, p. 165, Tonkin ; DAUTZENBERG &
FISCHER, t. c. figg. : n. spp.
Bithynia martreti, Mamoun Country ; GERMAIN, Bull. Mus. Paris x, p. 469 :
n. sp.
Cingula kurilensis, Kuril Is. ; PILSBRY, P. Ac. Philad. 1905, p. 106, fig. :
n. sp.
Cleopatra morrelli, Zambesi River ; PRESTON, P. Malac. Soc. London vi,
p. 300, fig. : *C. trinacata*, Tanganyika ; GERMAIN, Bull. Mus. Paris xi,
p. 257 : n. spp.
Cochliopa rowelli, note on habitat ; PILSBRY (458).
Daudebardella, n. gen., p. 119, for *D. nagelei*, p. 121, *asiana*, p. 122,
n. spp., Cilicia ; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905,
figg.
Diala tumida, Woods, note on ; MAY, P. Soc. Tasmania 1902, p. 111.
Diala polita, *semipellucida*, Ceylon ; PRESTON, J. Malac. xii, p. 4, figg. :
n. spp.
Fenella purpureoapicata, Ceylon ; PRESTON, t. c. p. 5, fig. : n. sp.
Lanistes foui, Upper Congo ; GERMAIN, Bull. Mus. Paris xi, p. 256 :
n. sp.
Lartetia surana, p. 114, *sodalis*, *compacta*, p. 116, Cilicia ; BOETTGER,
Nachrbl. Deutsch. malak. Ges. 1905, figg. : n. spp.
Lioplax pilsbryi, Florida ; WALKER, Nautilus xviii, p. 133, fig. : n. sp.
Paludestrina jenkinsi, n. var. ; OVERTON (431).
Paludestrina sulca, Massachusetts ; PILSBRY, Nautilus xix, p. 90, fig. :
n. sp.
Paludina vivipara, development ; OTTO & TÖNNIGES (430) : *P. quadrata*,
Bens., n. varr. ; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 157.
Paulia exigua, Cilicia ; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905,
p. 118, fig. : n. sp.
Potamopyrgus, review of New Zealand species ; SUTER, Tr. N. Zealand
Inst. xxxvii, p. 258.
Potamopyrgus brevieri, Vate I. ; ANCEY, Nautilus xix, p. 46 : *P. sub-*
terraneus, New Zealand ; SUTER, Tr. N. Zealand Inst. xxxvii, p. 267,
fig. : n. spp.
Rissoia cyclostoma, *agnevi*, Woods, p. 112, *rubicunda*, Tate & May, p. 119,
figd. ; MAY, P. Soc. Tasmania 1902.
Rissoia vulgaris, *micans*, *zosterophila*, p. 277, *carnea*, *candidissima*, p. 278,
New Zealand ; WEBSTER, Tr. N. Zealand Inst. xxxvii, figg. : *R.*
leptalea, p. 228, *microstriata*, *insculpta*, p. 229, New Zealand ;
MURDOCH, t. c. figg. : n. spp.
Rissoina, notes on three spp. ; WEBSTER, t. c. pp. 278 & 279 : *R. gertrudis*,
Woods, figd. ; HEDLEY, P. Soc. Tasmania 1902, p. 78 : *R. findersi*,
Woods, note and fig. ; MAY, t. c. p. 111.
Rissoina agrestis, New Zealand ; WEBSTER, Tr. N. Zealand Inst. xxxvii,
p. 279, fig. : *R. pellucida*, *delicatula*, *oscutana*, (*Rissolina*) *filicostata*,

- (*Morchiella*) *lankaensis*, Ceylon; PRESTON, J. *Malac.* xii, p. 5, figg. : **n. spp.**
Somatogyrus walkerianus, Alabama; ALDRICH, *Nautilus* xviii, p. 140, fig. : **n. sp.**
Stenothyra monilifera, Bena., figd.; DAUTZENBERG & FISCHER, J. *Conchyl.* liii, p. 153.
Torina densegranosa, Japan; PILSBRY, P. *Ac. Philad.* 1905, p. 106, fig. : **n. sp.**
Valvata lewisi, n. var.; DALL (165), p. 123.
Valvata nylanderi, Maine; DALL (165), p. 122 : **n. sp.**
Vitrella, n. var. from Wurttemberg; GEYER (234).
Vitrella sarigena, p. 297, *gonostoma*, p. 299, *suevica*, p. 300, Wurttemberg; GEYER, *Jahresh. Ver. Wurttemb.* lxi, figg. : **n. spp.**
Vivipara connecta, sinistral; STANDEN (558) : *V. connecta*, n. var.; TAYLOR, J. *Conch.* xi, p. 144.
Vivipara densestriata, Zambesi River; PRESTON, P. *Malac. Soc. London* vi, p. 300, fig. : *V. passargei*, Kalahari; MARTENS (385), p. 757, fig. : *V. joai*, Tanganyika, *lenfanti*, Lake Tchad; GERMAIN, *Bull. Mus. Paris* xi, p. 257 : **n. spp.**

CYCLOPHORIDÆ and CYCLOSTOMATIDÆ.

- Alycaeus varius*, Formosa; PILSBRY & HIRASE, P. *Ac. Philad.* 1905, p. 729 : **n. sp.**
Cataulus, notes on with n. var. of *C. marginatus*; SYKES (567).
Cataulus smithi, *prestoni*, p. 56, congener, p. 57, Ceylon; SYKES, J. *Malac.* xii, figg. : **n. spp.**
Cyathopoma taiwanicum, Formosa; PILSBRY & HIRASE, P. *Ac. Philad.* 1905, p. 724 : **n. sp.**
Cyclophorus unicus, Mabilie, figd.; DAUTZENBERG & FISCHER, J. *Conchyl.* liii, p. 167 : *C. turgidus*, n. subsp.; PILSBRY & HIRASE, P. *Ac. Philad.* 1905, p. 705.
Cyclostomatide, revision of American groups; DALL, P. *Malac. Soc. London* vi, p. 208 : *C. sulcatum*, Drap., and allied spp., note on; CAZIOT (96).
Cyclotus taiwanus, n. subsp.; PILSBRY & HIRASE, P. *Ac. Philad.* 1905, p. 705 : *C. taiwanus*, *scinkhoi*, *minutus*, n. subsp.; PILSBRY & HIRASE, t. c. p. 723.
Cyclotus (Eucyclotus) amabilis, N. Borneo; FULTON, *Ann. Nat. Hist.* xv, p. 83 : **n. sp.**
Diplommatina tokunoshimana, *tosana*, n. subsp.; PILSBRY & HIRASE, P. *Ac. Philad.* 1905, p. 706.
Diplommatina (Gastroptychia) electa, N. Borneo; FULTON, *Ann. Nat. Hist.* xv, p. 94 : *D. (Nacida) lankaensis*, (*N.*) *delectabilis*, Ceylon; PRESTON, J. *Malac.* xii, p. 9, figg. : *D. taiwanica*, p. 726, *camura*, *prava*, p. 727, Formosa; PILSBRY & HIRASE, P. *Ac. Philad.* 1905 : **n. spp.**
Hybocytis gravidu, *crossi*, and *rochebrunei* are all the same; DAUTZENBERG & FISCHER, J. *Conchyl.* liii, p. 171.
Japonia zebra, p. 722, *formosana*, p. 723, Formosa; PILSBRY & HIRASE, P. *Ac. Philad.* 1905 : **n. spp.**
Lagochilus scissinurgo, Bena., *fischeri*, Morl., notes on with figg. and n. var.; DAUTZENBERG & FISCHER, J. *Conchyl.* liii, p. 169.
Lagochilus proprium, Borneo; FULTON, *Ann. Nat. Hist.* xv, p. 93 : **n. sp.**
Opisthosphon, **n. gen.**, type *Chondropoma bahamense*, Shuttll.; DALL, P. *Malac. Soc. London* vi, p. 209.
Opisthostoma fraternum, North Borneo; SMITH, *Ann. Nat. Hist.* xv, p. 360 : *O. shelfordi*, *sadongense*, p. 169, *piccingense*, p. 190, Sarawak; SMITH, P. *Malac. Soc. London* vi, figg. : **n. spp.**

- Palaina francoini*, Espiritu Santo I.; ANCEY, Nautilus xix, p. 44: *P. (Adelopoma) paucicostata*, Japanese Empire; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 707: *P. formosana*, Formosa; PILSBRY & HIRASE, t. c. p. 728: **n. spp.**
- Parachondria*, **n. subgen.** of *Chondropoma*, type *Turbo fascia*, Wood; DALL, P. Malac. Soc. London vi, p. 209.
- Pseudopomatias eos*, Formosa; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 728: **n. sp.**
- Pupinella oshima*, **n. subsp.**; PILSBRY & HIRASE, t. c. p. 705.
- Rhytidopoma euploca*, Bahamas; DALL, Smithson. Collect. quart. xlvii, p. 449, fig.: **n. sp.**

TRUNCATELLIDÆ.

- Blandfordia formosana*, Formosa; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 750: **n. sp.**
- Geomelania*, note on type; SYKES, P. Malac. Soc. London vi, p. 225, fig.
- Geomelania jarvisi*, Jamaica; SYKES, t. c. p. 226, fig.: **n. sp.**
- Truncatella japonica*, Japanese Empire; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 707: **n. sp.**

CAPULIDÆ, XENOPHORIDÆ, ADEORBIIDÆ, LAMELLARIIDÆ and NATICIDÆ.

- Adeorbis angulata*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 50, fig.: **n. sp.**
- Caledoniella contusiformis*, South Australia; BASEDOW, Tr. R. Soc. S. Austral. xxix, p. 183, fig.: **n. sp.**
- Crepidula*, adaptation of shell; GRAF (244): *C. rugosa*, **n. var.**; WILLIAMSON, Nautilus xix, p. 50: *C. nivea*, **var.**; DALL (154).
- Natica cutena*, scalariform; SPAN, J. Conch. xi, p. 159, fig.
- Natica (Haloconcha) hirasei*, Japan; PILSBRY, P. Ac. Philad. 1905, p. 105, fig.: **n. sp.**
- +*Phryx*, **n. subgen.** of *Capulus* for *C. bilateralis*, **n. sp.**, Trias, Tirol; BLASCHKE, Beitr. Pal. Oesterr.-Ung. xvii, p. 174.
- Xenophora mediterranea* and *senegalensis*, note on; KOBELT, Nachrbl. Deutsch. malak. Ges. 1905, p. 64.

PTENOGLOSSA.

SCALIDÆ.

- Adis watsoni*, **n. n.** for *A. minutissima*, Watson non Desh.; PEZANT, Feuille Natural. xxxv, p. 88.
- Crossea glabella*, New Zealand; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 225, fig.: **n. sp.**
- Scala minutula*, Tate and May, note and fig.; HEDLEY, Rec. Austral. Mus. vi, p. 52.
- Scala turrisphari*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 52, fig.: **n. sp.**
- Scaluria zelebori*, note on; SUTER (577).
- Scaluria octogona*, *interstriata*, ? Ceylon; SOWERBY, Ann. Nat. Hist. xvi, p. 190: **n. spp.**

GYMNOGLOSSA.

EULIMIDÆ and PYRAMIDELLIDÆ.

- Enterokenos*, embryo; BONNEVIE (60).
- Eulimida*, notes on Adams' Japanese species, and fig. of *E. luchuana*,

- Pils.*, *articulata*, Sby.; PILSBRY, P. Ac. Philad. 1905, p. 107: *Æ. tasmanica*, Woods, is a *Rissoia*, with fig.; MAY, P. Soc. Tasmania 1902, p. 110.
- Eulima exasperata*, *indica*, Ceylon; PRESTON, J. Malac. xii, p. 6, figg.: *E. bovicornu*, *ogasawarana*, Japan; PILSBRY, P. Ac. Philad. 1905, p. 111, figg.: *n. spp.*
- Eulimella cæna*, New Zealand; WEBSTER, Tr. N. Zealand Inst. xxxvii, p. 279, fig.: *n. sp.*
- Odostomia impolita*, *rugata*, Hutton, notes on; MURDOCH (412).
- Odostomia proxima*, p. 226, *vestalis*, p. 227, New Zealand; MURDOCH, Tr. N. Zealand Inst. xxxvii, figg.: *n. spp.*
- Pseudorissoina elegans*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 51, fig.: *n. sp.*
- Pyramidella* (*Oscilla*) *mirabilis*, (*O.*) *suburbana*, (*Mormula*) *humilis*, p. 6, (*Acteopyramis*) *ceylanica*, (*A.*) *sykesi*, (*A.*) *suavissima*, p. 7, Ceylon; PRESTON, J. Malac. xii, figg.: *n. spp.*
- Turbonilla tasmanica*, Woods, is *Truncatella scalarina*; MAY, P. Soc. Tasmania 1902, p. 111.
- Turbonilla smithi* (Pfeffer, MS.), Magellan Region; STREBEL, Zool. Jahrb. Syst. xxii, p. 659, fig.: *T. coeni*, *sinkila*, (?) *princeps* [= *Terebra pygmaea*, Hinds], Ceylon; PRESTON, J. Malac. xii, p. 7, figg.: *n. spp.*

SCUTIBRANCHIATA.

RHIPHIDOGLOSSA.

PROSERPINIDÆ and HELICINIDÆ.

- Rhiphidoglossa*, structure of heart, etc.; SPILLMANN (555).
- Andamanica*, *n. sect.* of *Aphanoconia* for *Helicina andamanica*, Bens., etc.; WAGNER, Denk. Ak. Wien lxxvii, p. 406.
- Angulata*, *n. sect.* of *Helicina* for *H. leopoldina*, *n. sp.*, etc.; WAGNER, op. cit. lxxviii, p. 228.
- Aphanoconia*, *n. gen.* for *Helicina verecunda*, Gould, etc.; WAGNER, op. cit. lxxvii, p. 388: *A. bandana*, p. 406, *zigzag*, p. 409, *suturalis*, p. 411, *discoidea*, p. 413, *n. varr.*; WAGNER, t. c. p. 406.
- Aphanoconia eduardi*, Louisiades, p. 393, *braveri*, Woodlark I., p. 394, *submucronata* (Mlldff. MS.), New Guinea, *trichroa*, Banguay I., p. 400, *halongensis*, Tonkin, p. 404, *keiensis*, Kei Is., p. 405, *pentheri*, Tahiti, p. 408; WAGNER, t. c. figg.: *n. spp.*
- Citrina*, *n. sect.* of *Sulfurina* for *Helicina citrina*, Grat., etc.; WAGNER, t. c. p. 372.
- Concentrica*, *n. sect.* of *Helicina* for *H. concentrica*, Pfr., etc.; WAGNER, op. cit. lxxviii, p. 220.
- Dichroa*, *n. sect.* of *Aphanoconia* for *Helicina dichroa*, Mlldff., etc.; WAGNER, op. cit. lxxvii, p. 403.
- Discoidea*, *n. sect.* of *Aphanoconia* for *Helicina discoidea*, Pease, and *villosa*, Anton; WAGNER, op. cit. lxxvii, p. 413.
- Diversicolor*, *n. sect.* of *Orobophana* for *Helicina diversicolor*, Cox, etc.; WAGNER, t. c. p. 431.
- Euneritella*, *n. c. p.* of *Helicina* for *H. neritella*, Lam., etc.; WAGNER, op. cit. lxxviii, p. 212.
- Fulgora*, *n. sect.* of *Aphanoconia* for *Helicina fulgora*, Gould, etc.; WAGNER, op. cit. lxxvii, p. 408.
- Globulina*, *n. sect.* of *Sulfurina* for *Helicina crossei*, Pfr., etc.; WAGNER, t. c. p. 376.
- Helicina*, classification; WAGNER (617): *Helicina*, review of genus with *n. var.*; WAGNER (618): *H. rawsoni*, Pfr., figd.; DALL (158), p. 36.

- Helicina pandiensis*, New Granada, *schluteri*, Peru, p. 221, *infesta*, Venezuela, *ocanensis*, New Granada, p. 223, *steindachneri*, Venezuela, p. 224, *leopoldina*, p. 228, *wettsteinii*, p. 229, Brazil; WAGNER, Denk. Ak. Wien lxxviii, figg. : n. spp.
- Hemipoma*, n. gen. for *Helicina hakodadiensis*, Hartman, etc.; WAGNER, op. cit. lxxvii, p. 433.
- Hendersonia*, n. gen. for *Oligyra occulta*, Say; WAGNER, t. c. p. 364.
- Kalokonia*, n. sect. of *Palaeohelicina* for *P. moquiniana* (Recl.), etc.; WAGNER, op. cit. lxxviii, p. 204.
- Kosmetopoma*, n. subgen. of *Sulfurina* for *Helicina amalix*, Kob.; WAGNER, op. cit. lxxvii, p. 382.
- Miluna*, n. gen. for *M. josephinae*, n. sp., China; WAGNER, t. c. p. 363, fig.
- Musiva*, n. sect. of *Orobophana* for *Helicina musiva*, Gould, etc.; WAGNER, t. c. p. 429.
- Ogasawarana*, n. sect. of *Aphanoconia* for *Helicina ogasawarana*, Pils., etc.; WAGNER, t. c. p. 395.
- Orbiculata*, n. sect. of *Helicina* for *H. orbiculata*, Say, etc.; WAGNER, op. cit. lxxviii, p. 238.
- Orobophana*, n. gen. for *Helix sphaeroidea*, Pfr., etc.; WAGNER, op. cit. lxxvii, p. 415: *O. colorata*, p. 418, *mediana*, p. 424, n. varr.; WAGNER, t. c.
- Pachystoma*, n. sect. of *Orobophana* for *Helicina pachystoma*, Smith; WAGNER, t. c. p. 432.
- Palaeohelicina*, n. gen. for *Helicina fischeriana*, Montr., etc.; WAGNER, t. c. p. 435: Review of genus with n. varr.; WAGNER (618): *P. fischeriana*, p. 436, *stanleyi*, p. 438, n. varr.; WAGNER, t. c.
- Palaeohelicina hara*, British New Guinea; WAGNER, op. cit. lxxviii, p. 204, fig.: *P. heterochroa*, Pelew Is., p. 436, *filix*, Louisiades, p. 439; WAGNER, op. cit. lxxvii, figg. : n. spp.
- Primeana*, n. sect. of *Orobophana* for *Helicina primeana*, Gass., etc.; WAGNER, t. c. p. 423.
- Proserpina* (*Staffola*, n. sect.) *derbyi*, Brazil; DALL, P. Soc. Washington xviii, p. 202: n. sp.
- Punctisalcata* (sic), n. sect. of *Helicina* for *H. punctisalcata* (sic), Martens, etc.; WAGNER, Denk. Ak. Wien lxxviii, p. 218.
- Reticulata*, n. sect. of *Aphanoconia* for *Helicina verecunda*, Gould, etc.; WAGNER, op. cit. lxxvii, p. 389.
- Retorquata*, n. subgen. of *Helicina* for *H. zephyrina*, Duclos, etc.; WAGNER, op. cit. lxxviii, p. 230.
- Rhabdokia*, n. sect. of *Palaeohelicina* for *Helicina fischeriana*, Montr., etc.; WAGNER, op. cit. lxxvii, p. 435.
- Rostrata*, n. sect. of *Helicina* for *H. rostrata*, Morel, etc.; WAGNER, op. cit. lxxviii, p. 235.
- Scharicheila palmeri*, Mexico; DALL, Smithsonian. Collect. quart. xlviii, p. 191, fig. : n. sp.
- Sculpta*, n. sect. of *Aphanoconia* for *Helicina sculpta*, Martens; WAGNER, Denk. Ak. Wien lxxvii, p. 398.
- Sphaeroidea*, n. sect. of *Orobophana* for *Helicina sphaeroidea*, Pfr., etc.; WAGNER, t. c. p. 415.
- Staffola*, n. sect. of *Proserpina* for *P. derbyi*, n. sp., Brazil; DALL, P. Soc. Washington xviii, p. 202.
- Sturanya*, n. gen. for *Helicina plicatilis*, Mousson, etc.; WAGNER, Denk. Ak. Wien lxxvii, p. 383.
- Sturanya jetschini*, Samoa and Viti Is.; WAGNER, t. c. p. 384, fig. : n. sp.
- Subglobulosa*, n. sect. of *Helicina* for *H. subglobulosa*, Poey, etc.; WAGNER, op. cit. lxxviii, p. 240.

- Lottia gigantea*, chemical methods causing maturity of egg; LOEB (368, 369).
Patinella, Dall, renamed *Patinigera*, q. v.
Patinigera, n. n. for *Patinella*, Dall non Gray; DALL, *Nautilus* xviii,
 p. 113.
Scutellina nobilis, ?Ceylon; SOWERBY, *Ann. Nat. Hist.* xvi, p. 189 :
 n. sp.

III. SCAPHOPODA.

- Dentalium*, anatomy; DISTASO, *Zool. Anz.* xxix, pp. 271-278, figg.: *D. politum*, Costa, note on; MONTEROSATO (407): *D. entalis*, Desh., nervous system; DISTASO (186).
Dentalium rhabdotum, p. 116, (*Laevidentalium*) *coruscum*, (*Rhabdus*) *cerinum*, p. 117, Japan; PILSBRY, *P. Ac. Philad.* 1905, figg.: n. spp.

IV. PELECYPODA.

- Morphology, embryology, physiology and morphogeny; ANTHONY (11-13).
 Torsion of shell; CLARKE (118).
 Mechanism of boring in some Pelecypods; LLOYD (363).

SEPTIBRANCHIATA.

- Cuspidaria truncata*, New South Wales; HEDLEY, *Rec. Austral. Mus.* vi, p. 47, fig.: n. sp.

EULAMELLIBRANCHIATA.

ANATINACEA.

- Anatina smithi*, Ceylon; PRESTON, *J. Malac.* xii, p. 8, fig.: n. sp.
Aporema, Dall, renamed *Panacca*, q. v.
Panacca, n. n. for *Aporema*, Dall non Scudder; DALL, *Nautilus* xviii, p. 143.

PHOLADACEA.

- Martesia*, Eastern United States species; JOHNSON (306, 307).
Teredo, account of; KEER (322).

MYACEA and CARDIACEA.

- Cardium*, notes with figg.; BÜLOW (82): Variation of Caspian forms; OSTROUMOFF (429): *C. bechei*, Rve., note on; SMITH, *J. Malac.* xii, p. 27.
Cardium (*Trachycardium*) *pseudoangulatum*, Hab. incert.; BÜLOW, *Nachrbl. Deutsch. malak. Ges.* 1905, p. 80, fig.: n. sp.
Corbula pura, New Zealand; WEBSTER, *Tr. N. Zealand Inst.* xxvii, p. 279, fig.: n. sp.
Cultellus javanicus, anatomy; BLOOMER (51).
Cultellus (*Ensiculus*) *maculatus*, Ceylon; PRESTON, *J. Malac.* xii, p. 8, fig.: n. sp.
Ensis, anatomy; BLOOMER (49): *E. magnus*, anatomy; BLOOMER (50).

- †*Offneria*, n. gen., type *O. rhodanica*, n. sp., Urgonian; PAQUIER (437), p. 82.
- †*Onychocardium*, n. gen. for *O. portlandicum*, n. sp., Portage Rocks of Lake Erie; WHITFIELD, Bull. Amer. Mus. xxi, p. 18.
- †*Polyptychus*, n. gen. for *P. morgani*, n. sp., Santonian; DOUVILLÉ, Bull. Soc. geol. France iv, p. 520: also (92), p. 248.
- Præcaprina*, n. gen., type *P. varians*, n. sp., Urgonian; PAQUIER (437), p. 72.
- †*Radiolitella*, n. sect. (off?), type *Radiolites foroguliensis*, Pirona; DOUVILLÉ, Bull. Soc. geol. France iv, p. 535.
- Siliqua*, anatomy; BLOOMER (49).
- Siliqua intuspurpurea*, Japan; PILSBRY, P. Ac. Philad. 1905, p. 118, fig.: n. sp.
- Solecurtus dombeyi*, anatomy; BLOOMER (51).
- Solenida*, corrigenda to previous papers; BLOOMER (52): Anatomy of some species; BLOOMER (51).

VENERACEA and TELLINACEA.

- Callista (Callocardia) birtni*, Ceylon; PRESTON, J. Malac. xii, p. 8, fig.: n. sp.
- Chione*, occurrence of *Cercaria*; CHILTON (107): Notes on New Zealand species; SUTER, P. Malac. Soc. London vi, p. 202: SMITH, t. c. p. 206: *C. macleayana*, Woods, equals *C. stutchburyi*, Gray; HEDLEY, P. Soc. Tasmania 1902, p. 77.
- Chione subsulcata*, New Zealand; SUTER, P. Malac. Soc. London vi, p. 205: *C. fuegiensis*, Tierra del Fuego; SMITH, t. c. p. 336, fig.: n. spp.
- Cytherea ranella*, Lam., is from type a synonym of *Crista gibbia*, Lam.; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 215.
- Gastrana (Metis) bridgmani*, Ceylon; PRESTON, J. Malac. xii, p. 8, fig.: n. sp.
- Macoma*, notes on spp. with figg.; JENSEN (304, 305).
- Macrocallista chishimana*, Japan; PILSBRY, P. Ac. Philad. 1905, p. 118, fig.: n. sp.
- Maclura fuegiensis*, Tierra del Fuego; SMITH, P. Malac. Soc. London vi, p. 337, fig.: n. sp.
- Parmulina* renamed *Parmulophora*, q. v.
- Parmulophora*, n. n. for *Parmulina*, Dall non Penard; DALL, Nautilus xviii, p. 113.
- Raeta jickelii*, Massowa; STURANY, Nachrbl. Deutsch. malak. Ges. 1905, p. 133, fig.: n. sp.
- Semele warburtoni*, Woods, equals *Codakia orbicularis*, L.; HEDLEY, P. Soc. Tasmania 1902, p. 77.
- Standella æqualis*, New Zealand; WEBSTER, Tr. N. Zealand Inst. xxvii, p. 280, fig.: n. sp.
- Tellina (Peronax) ascensionis*, Ascension Island, p. 279, (*Tellinella*) *prismatic*, Sierra Leone, p. 280; SOWERBY, P. Malac. Soc. London vi, figg.: n. spp.
- Venus (Chione) keppeliana*, Sierra Leone; SOWERBY, t. c. p. 280, fig.: n. sp.

SUBMYTILACEA.

- Ætheriida*, ligament and ligamental area; ANTHONY (11): *Æ. bourguignati*, figd.; ROCHEBRUNE & GERMAIN (493).
- Anodonta*, parasitism of larva; FAUSBEK (205): *A. cygnea*, attached to Plover's foot; ADAMS (2): *A. fulcata*, Drt., n. var.; ROSEN, Nachrbl. Deutsch. malak. Ges. 1905, p. 63.

- Arthropteron*, n. gen. for *A. ouassouloui*, n. sp., Senegambia; ROCHEBRUNE, Bull. Mus. Paris x, p. 461.
- Bornia radiata*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 48, fig.: n. sp.
- Chamberlainia*, notes on; ROCHEBRUNE (491).
- Chamberlainia pavonina*, Siam; ROCHEBRUNE, Bull. Mus. Paris x, p. 464: n. sp.
- Corbicula fluminea*, Müll., synonymy; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 225.
- Corbicula elatior*, p. 65, *producta*, p. 66, Korea; MARTENS, Zool. Jahrb. Suppl. viii, figg.: n. spp.
- Corneocyclas hodgkini*, New Zealand; SUTER, Tr. N. Zealand Inst. xxvii, p. 246, fig.: n. sp.
- Crassatellites ponderosus*, Gmel., note on; VERCO (606): also SMITH, J. Malac. xii, p. 26.
- Cycladidae* of Southern United States; STERKI (564).
- Diplodon menziesi*, Gray, n. subsp.; SUTER, Tr. N. Zealand Inst. xxvii, p. 239.
- Diplodonta auriculata*, Sierra Leone: SOWERBY, P. Malac. Soc. London vi, p. 281, fig.: *D. nevilli*, (*Felania*) *crebristriata*, Ceylon; SOWERBY, Ann. Nat. Hist. xvi, p. 191: n. spp.
- Fischeria centralis*, French Soudan; GERMAIN, Bull. Mus. Paris x, p. 470: n. sp.
- Hyriopsis goliath*, Rolle, equals *Unio cumingi*, Lea; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 201.
- Leptospatha*, n. n. for *Spathella*, Bourguignat non Hall; ROCHEBRUNE & GERMAIN, Mem. Soc. zool. France xvii, p. 25: *L. brumpti*, *bozasi*, figd.; ROCHEBRUNE & GERMAIN (493).
- Levandaria*, n. gen. for *L. erythraensis*, n. sp., Massowa; STURANY, Nachrbl. Deutsch. malak. Ges. 1905, p. 134, fig.
- Lucina minima*, Woods, figd.; MAY, P. Soc. Tasmania 1902, p. 114: *L. childreni*, note on; DALL, Nautilus xviii, p. 110.
- Medionidus simpsonianus*, Georgia; WALKER, Nautilus xviii, p. 136, fig.: n. sp.
- Mitriodon*, n. gen. for *M. martini*, p. 462, *falerneensis*, *heudeloti*, p. 463, n. spp., Senegambia; ROCHEBRUNE, Bull. Mus. Paris x.
- Mutelidae*, critical notes on genera; ROCHEBRUNE (489).
- Mutela chevalieri*, Upper Oubanghi; GERMAIN, Bull. Mus. Paris x, p. 470: n. sp.
- Mutolina joubini*, Upper Oubanghi; GERMAIN, t. c. p. 470: n. sp.
- †*Namnetia*, n. gen. for *N. discoides*, n. sp., Tertiary, France; COSSMANN, Bull. Soc. Ouest France v, p. 147.
- Nodularia douglasiae*, n. subsp.; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 750.
- Phacoides (Miltha) xantusi*, Gulf of California; DALL, Nautilus xviii, p. 111: n. sp.
- Pisidium*, several n. varr.; STERKI (566).
- Pisidium limatulum*, Alabama; STERKI, Nautilus xviii, p. 108: *P. atlanticum*, United States; STERKI, t. c. p. 128: n. spp.
- †*Protopis*, n. subgen. of *Opis* for *O. triptycha*, n. sp.; KITTL, Jahrb. Geol. Reichsanst. liii, p. 718 [om. 1904].
- Quadrula archeri*, p. 13, *rubidula*, p. 14, Alabama; FRIERSON, Nautilus xix, figg.: n. spp.
- Scintilla blaisi*, Tonkin; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 212, fig.: n. sp.
- Simpsonia*, n. gen., p. 465, for *Unio duclerci*, Rochbr., and *S. demangei*, n. sp., Tonkin, p. 466; ROCHEBRUNE, Bull. Mus. Paris x.
- Spatha (Leptospatha) decorsei*, Chari Region; GERMAIN, t. c. p. 469: n. sp.

Spathella, Bourguignat, renamed *Leptospatha*, q. v.

Sphaerium courteti, Mamoun Country; GERMAIN, Bull. Mus. Paris x, p. 470: *S. mexicanum*, Mexico; DALL, Smithsonian Collect. quart. xlviii, p. 193, fig. : **n. spp.**

Trapezium japonicum, Japan; PILSBRY, P. Ac. Philad. 1905, p. 119, fig. : **n. sp.**

Unio, notes on young forms; FRIERSON (212): Ancestry of North American forms; WHITE (632): Variability; SUTER, Tr. N. Zealand Inst. xxxvii, p. 241: Glochidia found on fishes; CONNER (133): *U. luteolus*, note on; LATCHFORD, Nautilus xix, p. 34: *U. jourdyi*, *leai*, **n. var.**; DAUTZENBERG & FISCHER (171): *U. coreanus*, p. 50, *gottschei*, p. 51, *acrorrhynchus*, p. 53, *pliculosus*, p. 60, *verrucifer*, p. 61, Korea, figd.; MARTENS, Zool. Jahrb. Suppl. viii.

Unio chipolaensis, Florida; WALKER, Nautilus xviii, p. 135, fig.: *U. zambienensis*, Zambesi River; PRESTON, P. Malac. Soc. London vi, p. 301, fig.: *U. (Quadrula) blaisei*, Tonkin; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 210, fig. : **n. spp.**

PSEUDOLAMELLIBRANCHIATA.

Limea acclivis, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 46, fig. : **n. sp.**

Margaritifera, structure of gill; HERDMAN (275): Development; SEURAT (516): *M. vulgaris*, anatomy; HERDMAN (277): *M. vulgaris*, parasites; SHIPLEY & HORNELI (522, 523).

Ostrea, account of; BROOKS (69): Larval stages of Canadian form; MACBRIDE (375): Larva and spat of Canadian form; STAFFORD (556): *O. virginica*, growth of; GLASER (239): *O. virginica*, anatomy, embryology and growth; MOORE (408).

Pecten, critical notes on several species; BAVAY, J. Conchyl. liii, p. 18: Notes on, with nom. nud.; BAVAY (33): Popular notes; MANGER, P. South London Soc. 1904-5, p. 23: *P. laqueatus*, notes on; TAKE-SHITA (588): *P. frigidus*, Jensen, notes on with fig.; BAVAY, Mem. Soc. zool. France xvii, p. 189.

P. awajensis, Japan; PILSBRY, P. Ac. Philad. 1905, p. 121, fig.: *P. kep-pelianus*, Ascension Island (?) and Cape Verd Islands; SOWERBY, P. Malac. Soc. London vi, p. 279: *P. (Amussium) andamanense*, Andamans, p. 186, (*A. cristatum*, Masandam I., p. 187, (*Chlamys*) *fluctuatus*, Andamans, p. 188; BAVAY, Mem. Soc. zool. France xvii, figg.: *P. imparicostatus*, New Zealand, p. 23, *rapanensis*, Rapa I., p. 25, BAVAY, J. Conchyl. liii, figg.: **n. spp.**

†*Pseudoheligmus*, **n. gen.** for *P. morgani*, **n. sp.**, Secondary, Persia; DOUVILLÉ (192), p. 264.

Spondylus, popular notes; MANGER, P. South London Soc. 1904-5, p. 14.

FILIBRANCHIATA.

Adacnarca squamea, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 45, fig. : **n. sp.**

Arca, notes on species from Djibouti; LAMY (348): *A. pistachia*, Lam., note on; SMITH, J. Malac. xii, p. 27.

Glycymeris, notes on name; DALL (156).

Ischadium, **n. subgen.** of *Brachydontes*, type *I. hamatum*, Say; JUKES-BROWNE, P. Malac. Soc. London vi, p. 223.

Lithophagu lithura, Japan; PILSBRY, P. Ac. Philad. 1905, p. 119, fig. : **n. sp.**

Mytilida, genera of; JUKES-BROWNE, P. Malac. Soc. London vi, p. 211.

Placunanomia, adaptation of shell; GRIFFIN (249).

†*Streptomytilus*, n. gen., type *S. wabashensis*, n. sp., Devonian; KINDLE, Rep. Indiana Geol. xviii, p. 452.

PROTOBRANCHIATA.

Leda ambliia, California; DALL, Nautilus xviii, p. 123: n. sp.

Nucula nucleus, new sensitive organ; VLES (615).

V. AMPHINEURA.

APLACOPHORA.

Solenogastres, the radula; NIERSTRASZ (421), p. 666.

Limifossor talpoideus, Heath, morphology; HEATH (263).

Kruppomonia minima, Nierstrasz, described in detail and figd.; NIERSTRASZ, Zool. Jahrb. Anat. xxi, p. 655.

POLYPLACOPHORA.

Notes on many species of Indo-Pacific Region; NIERSTRASZ (420).

Acanthochites rubiginosus, Hutton, figd.; SUTER (576).

Acanthochites biformis, p. 55, *intermedius*, p. 56, (*Notoplax*) *rubromaculatus*, p. 61, (*N.*) *unicus*, p. 62, (*Loboplax*) *holosericeus*, p. 66, (*Cryptoconchus*) *burrowi*, p. 68, East Indies; NIERSTRASZ (420), figg.: n. spp.

Acanthopleura corticata, Hutton, equals *A. granulata*, Gmel.; SUTER (576).

Callistochiton carpenteri, East Indies; NIERSTRASZ (420), p. 39, fig.: *C. leidenis*, p. 143, Hab—I, *porosus*, p. 146, Rio Janeiro; NIERSTRASZ, Notes Leyden Mus. xxv, figg.: n. spp.

Callochiton empleurus, Hutton, figd.; SUTER (576).

Callochiton sulcatus, East Indies; NIERSTRASZ (420), p. 35, fig.: n. sp.

Chitonida, morphology and origin of the egg-integument; SCHWEIKART (510), p. 374: Breeding habits; HEATH, Zool. Anz. xxix, pp. 390-393: *C. quoyi*, Desh., n. subsp.; SUTER (576).

Chiton speciosus, p. 77, *imbricatus*, p. 79, *reticulatus*, p. 81, East Indies; NIERSTRASZ (420), figg.: n. spp.

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VIII. BRACHIOPODA.

BY

E. R. SYKES, B.A. .

ASSISTED BY

E. A. SMITH, I.S.O.

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- †*Schuchertina*, n. gen., type *S. cambria*, n. sp., Cambrian; WALCOTT, t. c. p. 323.
- †*Swantonina*, n. gen., type *Camarella antiqua*, Billings; WALCOTT, t. c. p. 296.
- †*Terebratalia transversa*, Sby., variation; SHIMER, Amer. Natural. xxxix, p. 691.

IX. BRYOZOA.

BY

HELEN P. KEMP.

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INTRODUCTION.

THE Bryozoa literature of 1905 is marked by some important papers on structure, development and relationship. RETZIUS (61, 62) has an excellent monograph on the nervous system of certain Bryozoa demonstrating, by means of the silver method, undoubted nerve cells from which fibres can be traced to their junction with larger central strands; also a paper on the sperm-apparatus of various evertebrates. WATERS (76) reports observations on the structure of *Entalophora regularis* showing the presence of a thick membranous transverse wall near the distal end of the tentacle-sheath. DUBLIN (30, 31) reports work on the relationship between the nucleoli and the chromosomes of the somatic and germ cells of *Pedi-*

cellina americana. By observations of their respective stain affinities, and their disposition at various periods of the cell metabolism, he shows that the nucleoli are not chromatin bodies and come only incidentally into connection with the chromosomes to which they in no way give origin. He insists upon the importance of an early mingling of gonomeric characters in order to ensure perfect larvæ, and points out that this supports the fact of the nucleoli being unconnected with the gonometry of the cell. CUMINGS (22, 23) in a paper upon the development and metamorphosis of *Fenestella* brings forward evidence that the genetic relation of this form to the Cyclostomata proves the latter to be the ancestor of the Cryptostomata and thus of the Cheilostomata. He shows a tendency towards concentration of the earlier developmental stages, and explains the large size of the protœcium in ancient types as due to a less degree of acceleration. Miss A. ROBERTSON (64, 65) has a note on the Embryology and Embryonic fission of the genus *Crinia*; and also a monograph on the Cheilostomatous Bryozoa of the West Coast of North America. She criticises Hincks' diagnosis of the *Aeteida*. HALLEZ (34) has a paper on rheotropism in *Bugula avicularia*.

CALVET (10, 11) gives descriptions of the marine Bryozoa in the collection of the Musée Royal at Brussels, and from the zoological station at Cette; RÖMER (66) a list of Norwegian Bryozoa; SEELIGER (69) a note on Bryozoan larvæ and metamorphoses. Miss L. R. THORNTON (74) has a report on Herdman's collection of Polyzoa from Ceylon.

AMEGHINO (1) in "L'âge des formations sédimentaires de Patagonie" criticises Hatcher's views. NEVIANI (53, 54, 55) continues his bibliography of living and fossil Bryozoa, and has a paper on the Eocene fossils from Villatorta. THEVENIN (72) has a note on the Fossils of the Lower Carboniferous layer of Djebel Bechar, and WHITFIELD (80) on a new genus and species of Lower Carboniferous Bryozoon. MAPLESTONE (46) gives a list of the Fossil Cheilostomatous Polyzoa of the Victorian Tertiary Deposits. LANG (42) has a paper on *Stomatopora antiqua* and its related Liassic forms.

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- Crisia*, embryology and embryonic fission, ROBERTSON, Univ. Calif. publ. Zool. i, No. 3, 1903, pp. 115-156, pls. 12-15.
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 †*Dictyoretmon* n. gen., *D. burlingtonense* n. sp., WHITFIELD, Bull. Amer. Mus. xx (1904), p. 469.
Entalophora regularis MacGill, structure of, WATERS, J. Linn. Soc. xxix, 191, pp. 230-251.
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 †*Idmonea*; NEVIANI, Boll. Naturalista xxv (4-5), p. 25.
 †*Pachydictya macropora*, HENNIG, Arkiv Zool. ii (3), pp. 32-35, figg. 33-36, Taf. 2, fig. 4; *P. holmi* n. sp., HENNIG, t. c. pp. 25-32, figg. 22-32, Taf. 1, fig. 5 : n. spp.

- †*Phanopora lindströmi* Ulr., HENNIG, diagnosis, Arkiv Zool. ii (3), pp. 10–16, figg. 1–7, Taf. 1, figg. 1 & 2.
 †*Pristinopora* sp., in Carboniferous of S.W. Montana, DOUGLASS, Ann. Carnegie Mus. viii, No. 2, p. 419.
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 †*Thamnisus* n. sp., DESTINEZ, Ann. Soc. geol. Belgique xxxii (3), p. 127.

(b) CHEILOSTOMA.

- Asteida* Hincks, diagnosis, ROBERTSON, Unif. Calif. publ. Zool. ii, No. 5, pp. 235–322.
Astea anguina Lamouroux, ROBERTSON, t. c. pl. iv, figg. 1–4.
Beania longispinosa n. sp., ROBERTSON, Univ. Calif. publ. Zool. ii, No. 5, p. 277, pl. xii, figg. 65 & 66.
Bugula avicularia, Rheotropism, HALLEZ, C.R. Ac. Sci. xli, Pt. 21, p. 842, 1905.
B. californica, pp. 267 & 268, pls. x, fig. 49, xvi, fig. 100, *B. pugeti*, pp. 271 & 272, pls. x, figg. 53 & 54, xi, fig. 55, *B. curvirostrata*, pp. 272 & 273, pl. xi, figg. 56–58, *B. longirostrata*, p. 274, pl. xi, figg. 59 & 60, *B. lara*, p. 275, pl. xii, figg. 61 & 62, ROBERTSON, Univ. Calif. publ. Zool. ii, No. 5, n. spp.
Cellaria diffusa n. sp., ROBERTSON, t. c. p. 289, pls. xv, fig. 90, xvi, fig. 104.
Cellepora compacta, L. R. THORNL, Pearl Oyster Fish. Rep. to Col. Gov. Suppl. Rep. xxvi, pp. 107–130; *C. petiolata*, WATERS, J. Linn. Soc. xxix, 191, p. 241, pl. 29, figg. 19 & 20 : n. spp.
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X. CRUSTACEA.

(Including
GIGANTOSTRACA AND PYCNOGONIDA.)

BY

W. T. CALMAN, D.Sc.

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INTRODUCTION.

THE great increase in the number of titles recorded under Crustacea as compared with last year (355 against 258) is partly due to the later date of closing the list, but chiefly to the rigorous preliminary searching of the periodicals by Mr C. Hadrill.

No very outstanding contributions to the general morphology of the Crustacea seem to be among the works recorded, though several authors such as CARPENTER (56) and THIELE (301) deal with questions affecting the class as a whole. In two papers on *Isopoda* (129 & 130), HANSEN has elucidated many points of morphology with his accustomed thoroughness. Especially in that dealing with the *Sphaeromida* (130) he has provided a stable basis for the classification of a large and hitherto chaotic group. G. SMITH (285) has vindicated the general accuracy, on which doubt had been cast, of Fritz Müller's account of dimorphism in male *Tanaida*. In the same paper he also describes, in the males of certain crabs, an alternation of breeding and non-breeding phases, parallel to that long known in the genus *Cambarus*. BOUVIER's (25) memoir on the *Atyida* not only provides a valuable revision of the family but gives a most interesting account of the "mutations" which he has discovered in these freshwater prawns. Attention should also be called to PRZIBRAM's (231) study of "Heterochelie" in Decapoda.

BLANC's (19) announcement of the discovery of a Caprellid in the Lake of Geneva is somewhat startling, but it is inevitable that it should be received with scepticism while it rests on the evidence of a solitary specimen.

Among the more purely systematic works an important place must be given to ALCOCK's fine monograph of the Indian *Paguridea* (1). Mention may also be made of the long series of papers on the collections of the Prince of Monaco (26-28, 31-34, 61-66, 81-85, 87, 126, 127, 258, 259) and on those from the West of Ireland (51, 52, 104, 105, 137, 138, 224, 297-300), from the Maldivé Islands (88, 317, 337), Ceylon (223, 265, 290), and the Cape (293), and of DADAY's large work on the freshwater fauna of Paraguay (92).

The most important event of the year as regards the *Pyrosomidae* is HODGSON'S (9) redescription of the long lost *Dreolepoda*, which appeared almost simultaneously with LOMAX'S (11) confident assertion that this animal is "ein irrationelles Monstrum."

The inconvenience caused by repaged reprints is unfortunately familiar enough, but a still more misleading practice, new to the present Recorder, has been followed in some reprints from the Bull. Mus. Paris, in which the original pagination is carefully preserved while the setting of the type is altered so that the pages no longer correspond to those of the original.

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14. —. Nouvelles observations sur le *Lernæenicus*, Copépode parasite de la Sardine. Bull. Mus. Paris xi, 1905 (5), pp. 299 & 300.
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28. —. Sur les Crustacés décapodes (abstraction faite des Carides) recueillis par le yacht "Princesse-Alice" au cours de la campagne de 1905. Op. cit. cxli, pp. 644-647.

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49. —. A revision of "Crustacea Isopoda Terrestria" with additions and illustrations. 2. *Spherillonina*. 3. *Armadillo*. Kjøbenhavn. H. Hagerup, publisher, Nielsen and Lydiche, printers, 1904, pp. 33-144, pls. vi-x. Size 17.5 x 26.5 cm.
This forms the continuation of No. 48 but, unlike it, was only published separately, and only in one size.
On p. 50 and elsewhere in this paper reference is made to "Dollf[us], in Weber, Reise Niederl. O.-Ind. iv." The fourth volume of Prof. Weber's work is not yet (September 1906) obtainable in London. The Recorder is indebted to Mr Budde-Lund for copies of his work and for the information given in these notes.
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"Bipolarity" and distribution of *Schizopoda* and *Phyllocarida*; ZIMMER & THIELE (349).

a. *Atlantic and Mediterranean.*

European Seas, *Cirolanina* (*Isopoda*, *Flabellifera*) n. spp.; HANSEN (128).

Atlantic Ocean, *Copepoda* n. spp.; WOLFENDEN (336): N. Atlantic, *Loricata* and *Eryonidea* n. spp.; BOUVIER (31): *Glaucothoe* (*Pagurid* larvæ); BOUVIER (33): *Macrura*, *Eryonidea* n. spp.; BOUVIER (34): *Amphipoda*, *Gammarina* n. sp.; CHEVREUX (63): *Amphipoda*, *Gammarina*, list and n. sp.; CHEVREUX (64): list of *Scinidae* (*Amphipoda*, *Hyperina*) and n. sp.; CHEVREUX (65): *Amphipoda*, *Hyperina* n. sp.; CHEVREUX (66): *Caridea* n. spp.; COUTIÈRE (87): *Isopoda* n. sp.; HANSEN (130): list of Crustacea; NORMAN (204): bathypelagic Crustacea; RICHARD (243): *Copepoda*, *Calanoida*, list and n. spp.; SARS (258 & 259): N.E. Atlantic, *Schizopoda*; CALMAN (51): N.E. Atlantic, W. of Ireland and Bay of Biscay, *Schizopoda* n. spp.; HOLT & TATTERSALL (138): Bay of Biscay, *Schizopoda* of plankton; HOLT & TATTERSALL (139): 200 miles off W. of Ireland, *Schizopoda*; HOLT & TATTERSALL (140): E. Atlantic, *Caridea* n. spp.; COUTIÈRE (81): *Eryonidea* n. spp.; BOUVIER (28): *Peneidea* and *Stenopidea*; BOUVIER (27): *Loricata* n. spp., *Eryonidea* n. spp.; BOUVIER (26): between Gibraltar, Azores and Canaries, *Schizopoda* n. spp.; HANSEN (126 & 127): between Azores and Canaries, *Amphipoda*, *Gammarina* n. sp.; CHEVREUX (62): Azores, *Amphipoda*, *Gammarina* n. sp.; CHEVREUX (61): Cape Verde Ids. *Loricata*; BOUVIER (32).

Norway, *Copepoda*, *Ostracoda*, *Cirripedia*, *Phyllocarida*, *Amphipoda*, *Isopoda*, *Cumacea*, *Schizopoda*, *Decapoda*; NORDGAARD (203): *Copepoda* n. spp.; SARS (257): Drøbakssund, Crustacea, esp. *Decapoda* and *Cirripedia*; KLIER (161).

North Sea, Crustacea; CONSEIL INTERNAT. EXPL. MER (75): *Gammarina* n. spp.; REIBISCH (241): North Sea and Zuyder Zee, *Copepoda*, *Cladocera*, *Caprellina*, *Stomatopoda*, VAN BREEMEN (38).

British Seas: Revised nomenclature of *Amphipoda*, *Tanaidacea* and *Isopoda*; NORMAN (205): *Copepoda* n. sp.; SCOTT (270).

Scotland: *Schizopoda*, *Cumacea*, *Amphipoda*, *Isopoda*, *Ostracoda*, *Copepoda*, *Cladocera*; T. SCOTT (266): *Copepoda* n. spp.; T. SCOTT (267): *Copepoda* n. spp., *Isopoda*; T. SCOTT (268): Firth of Forth, *Copepoda* n. sp.; NORMAN & SCOTT (207): Clyde area, *Schizopoda*; PATIENCE (217): Clyde, Plankton Crustacea, esp. *Copepoda* and *Cladocera*; SCOTT (269).

England: Off Northumberland and Durham, *Cumacea*, *Amphipoda*, *Isopoda*, *Copepoda*, n. spp.; BRADY (36): Cornwall, *Copepoda* n. sp.;

WILSON (333) : Devon and Cornwall, *Copepoda* n. spp. ; NORMAN & SCOTT (207) : English Channel, Crustacea ; GOUGH (116).

Irish Sea : *Decapoda*, *Copepoda* ; JOHNSTONE (150) : Crustacea, esp. *Copepoda*, *Cladocera*, larval *Decapoda* and *Stomatopoda* ; A. SCOTT (264) : Port Erin, *Monstrilla* ; ASHWORTH (10) : *Isopoda* ; HEWITT (134) : Crustacea, esp. *Copepoda* and *Cladocera* ; A. SCOTT (263).

Ireland : List of *Ostracoda* ; NORMAN (206) : *Copepoda* ; PEARSON (224) : off Co. Dublin, *Decapoda* ; COLGAN (73).

West of Ireland : *Cumacea* n. spp. ; CALMAN (52) : *Copepoda* n. spp. ; FARRAN (104) : *Cirripedia* ; FARRAN (105) : *Tanaidacea* and *Isopoda* n. spp. ; TATTERSALL (297) : *Phyllocarida* ; TATTERSALL (298) : *Stomatopoda* (larvæ) ; TATTERSALL (299) : *Tanaidacea* n. sp., *Isopoda* n. spp. ; TATTERSALL (300).

French coast : Boulogne, *Copepoda* ; CLIGNY (72) : *Decapoda* ; HALLEZ (125) : Saint-Vaast-la-Hogue, *Epicaridea* ; GIARD (112) : Arcachon, *Copepoda* ; PÉREZ (225) : Guéthary, *Caridea* ; PÉREZ (227).

Portugal, Crustacea, lists ; NOBRE (202).

Mediterranean : *Copepoda* ; ANTHONY & CALVET (8) : *Brachycarpus* (*Caridea*) ; NOBILI (191) : Italy, parasitic *Copepoda* ; GOGGIO (114) : Naples, *Copepoda* ; BRIAN (42) : *Hyperina* ; SENNA (275) : *Caridea* ; SENNA (276) : Messina, *Macrura* n. spp. ; RIGGIO (250) : *Schizopoda* and *Decapoda* ; THIELE (302) : Palermo, *Macrura* ; RIGGIO (251).

N. America : *Isopoda* n. spp. ; RICHARDSON (246) : *Copepoda* n. spp. ; WILSON (333) : Gulf of St Lawrence, *Copepoda*, *Branchiura*, and *Cladocera* ; T. SCOTT (272) : New England, list of Crustacea, with localities ; RATHBUN (238) : Southern New England, *Amphipoda* n. spp. ; HOLMES (136) : Massachusetts, *Copepoda* n. spp. ; WILSON (332) : Woods Hole, *Branchiura* ; WILSON (330).

New York city : *Schizopoda*, *Decapoda*, *Stomatopoda*, *Cumacea*, *Amphipoda*, *Tanaidacea*, *Isopoda* ; PAULMIER (220) : Florida, *Catometopa* n. sp. ; RATHBUN (237).

West Indies and S. America, *Peneidea* and *Stenopidea* n. spp. ; BOUVIER (29) : West Indies and Gulf of Mexico, *Thalassinidea* n. spp. ; BOUVIER (30).

S. Atlantic, *Schizopoda* n. sp. ; ILLIG (145).

Cape of Good Hope, see under Indo-Pacific.

b. Indo-Pacific.

Red Sea, *Copepoda* n. sp. ; BRIAN (44) : *Brachyura* n. sp. ; NOBILI (198) ; Red Sea and Gulf of Aden, *Brachyura* n. spp., *Anomura* n. spp., *Macrura* n. spp. ; NOBILI (201) : Red Sea, coast of Arabia, and Persian Gulf, *Brachyura* n. spp., *Anomura* n. spp., *Macrura* n. spp. ; NOBILI (197) : Persian Gulf, *Brachyura* n. sp., *Anomura* n. sp., *Macrura* n. spp. ; NOBILI (200) : Indian Seas, Persian Gulf, Arabian Sea, Bay of Bengal, Gulf of Martaban, Andaman Ids., *Decapoda* n. spp. ; MACGILCHRIST (174).

Indian Ocean, *Glaucothoe* n. sp. (*Pagurid* larvæ) ; BOUVIER (33) : *Schizopoda* n. sp. ; ILLIG (146).

Indian Seas : *Pagurida* n. spp. ; ALCOCK (1) : *Peneidea* n. spp. ; ALCOCK (4) : list of pedunculate *Cirripedia* ; ANNANDALE (7).

Andaman Sea, *Oxytomata* n. sp. ; ALCOCK (3).

Gulf of Manaar : *Macrura* n. spp. ; PEARSON (223) : *Ostracoda* n. spp. ; A. SCOTT (265) : *Tanaidacea* n. spp., *Isopoda* n. spp. ; STEBBING (290).

Maldives and Laccadive Ids., *Pagurida* n. spp. ; ALCOCK (2) : *Alpheidea* (*Caridea*) n. spp. ; COUTIERE (80 & 88) : *Amphipoda* n. spp. ; WALKER (317) : *Copepoda* n. spp. ; WOLFENDEN (337).

Zanzibar, *Decapoda* (*Caridea* n. sp.), *Stomatopoda* ; NOBILI (192) :

Zanzibar, Aldabra etc., *Brachyura* n. spp., *Anomura*, *Macrura* n. sp., *Stomatopoda* n. spp.; LENZ (167).

Cape of Good Hope, *Brachyura* n. sp., *Anomura* n. sp., *Macrura* n. spp., *Schizopoda*, *Copepoda*; STEBBING (293): *Ascothoracida* (*Cirripedia*) n. sp.; LE ROI (254).

Malaysian Seas: *Cirripedia* n. spp.; ANNANDALE (7): *Cumacea* n. spp.; CALMAN (54): *Nephropsidea* n. sp., *Loricata* n. spp., *Eryonidea* n. sp., *Thalassinidea* n. spp.; DE MAN (176): Java, *Isopoda* n. sp.; HANSEN (130).

German New Guinea, *Decapoda* n. spp.; NOBILI (196).

South Australia, *Brachyura* n. spp.; BAKER (11): *Anomura* n. sp.; BAKER (12): off Port Jackson, *Brachyura* n. spp., *Anomura* n. sp., *Macrura*; GRANT (117).

Philippines, *Ascothoracida* (*Cirripedia*) n. sp.; LE ROI (254).

Hong Kong, *Penaeidea* n. spp.; ALCOCK (4).

Japan: *Brachyura*; DOFLEIN in ZIMMER (349): *Penaeidea* n. sp.; KISHINOUE (162): *Catometopa* n. sp.; NOBILI (195).

N. Pacific, Crustacea; NORMAN (204).

Hawaiian Ids., *Schizopoda*; ORTMANN (215).

Gambier Ids., *Oxyrhyncha* n. sp.; BOUVIER & SEURAT (35).

Eastern Pacific, *Epicaridea* n. sp.; RICHARDSON (249).

North and South America, *Copepoda* n. spp.; WILSON (333): N. America, *Isopoda* n. spp.; RICHARDSON (246): Alaska, *Isopoda* n. sp.; RICHARDSON (248): California, *Tanaidacea* n. spp.; RICHARDSON (244): Lower California, *Stomatopoda* n. sp.; COUTIERE (86): Panama, *Isopoda*, *Flabellifera* n. sp.; RICHARDSON (245): Juan Fernandez, *Decapoda* and *Stomatopoda*; PORTER (230): Chile, *Cirripedia*; VAYSSIÈRE (313): Coquimbo, *Galatheidæ*; PORTER (229).

c. Arctic and Antarctic.

Arctic Ocean, list of Crustacea; NORMAN (204).

Antarctic Seas: *Gammarina* n. spp.; CHEVREUX (67): Crustacea; HODGSON (135): *Schizopoda* n. sp.; ILLIG (146): *Phyllocarida* n. sp.; THIELE (303): *Copepoda* n. spp.; WOLFENDEN (336): Cape Adare, *Amphipoda*; THOMSON (305).

2. GEOLOGICAL

Catalogue of fossil *Brachyura* and *Cirripedia* in DeFrance Collection; BIGOT (16).

Glacial deposits, Frankfurt (Oder), *Ostracoda*; HUCKE (142): Post-pliocene, Palermo, *Brachyura*; CHECCHIA-RISPOLI (60): Pleistocene, Württemberg, *Ostracoda* n. spp.; SIEBER (282).

Tertiary: Mainz district, *Ostracoda* n. spp.; LIENENKLAUS (168): Nigeria, *Macrura* n. sp.; AMMON (6): New Hebrides, *Ostracoda*; CHAPMAN (59): "Molasse," Berne, *Cirripedia*; TIECHE (308): Lower Tertiary, Victoria, *Catometopa*; HALL (124): Upper Miocene, France, *Cirripedia*, *Brachyura*; COUFFON (77): Miocene, Gay Head, Mass., *Brachyura*; CUSHMAN (90): Württemberg, *Ostracoda* n. spp.; SIEBER (282): Eocene, France, *Decapoda* and *Cirripedia* (spp. indet.); DONCIEUX (99).

Cretaceous: *Decapoda* and *Cirripedia*, types in Philadelphia; JOHNSON (149): Münster, *Cirripedia*, *Macrura*; WEGNER (321): New Jersey, *Brachyura* [*Dromiacea*] n. sp.; WELLER (323).

Jurassic: Tithonian, Stramberg, *Isopoda*, *Anomura*, *Brachyura*; REMÉŠ (242).

Trias: Britain, *Phyllopoda*; NEWTON (188), WOODWARD (342): Germany, *Phyllopoda*; WALTHER (319).

Carboniferous : Scotland, *Crustacea* ; PEACH & HORNE (222) : Lower Coal Measures, Lancashire, *Macrura* n. sp. ; WOODWARD (341).

Devonian : Ural, *Ostracoda* ; KAZANSKII (156) : Argentine, *Ostracoda* n. sp. ; THOMAS (304) : Upper Devonian, New York, *Ostracoda* n. sp. ; LOOMIS (172).

Silurian : Holland, *Ostracoda* ; JONKER (151) : N. Baltic region, *Ostracoda* n. spp. ; WIMAN (334) : New York, *Ostracoda* ; SHIMER (281).

Ordovician : Chazy, New York, *Ostracoda* n. spp. ; RAYMOND (240) : Pennsylvania, *Phyllopoda* n. sp. : COLLIE (74).

IV. SYSTEMATIC.†

[In addition to papers quoted below, see DE BUEN (50), CARPENTER (56), CONSEIL INTERNAT. EXPL. MER (75), COULON (78), GADZIKIEWICZ (108), GILSON (113), GOUGH (116), HODGSON (135), HOLT (137), JOUBIN (153), LIVON & BRIOT (169), LOEB (170), NOBRE (202), NORDGAARD (203), NORMAN (204), †PEACH & HORNE (222), QVIGSTAD (233), RICHARD (243), THIELE (301).

List of Crustacea of New England ; RATHBUN, Pap. Boston Soc. vii.

A. MALACOSTRACA.

1. DECAPODA.

[See also BORDAGE (24), COLGAN (73), CUÉNOT (89), DEYROLLE (94), †DONCIEUX (99), GARREY (110), HALLEZ (125), HERRICK (133), †JOHNSON (149), JOHNSTONE (150), JORDAN (152), KIÆR (161), KOLTZOFF (163), KÜNCKEL (164), PAULMIER (220), SAINT-HILAIRE (256), DOFLEIN in ZIMMER (349).]

Decapoda, "heterochelie" and regeneration ; PRZIBRAM, Arch. Entwickl.-mech. xix, pp. 181-247, pls. viii-xiii, and Zentrbl. Physiol. xviii, No. 24.

a. BRACHYURA.

[See also †BIGOT (16), †COUFFON (77), GARSTANG (111), PAULMIER (219), †REMEŠ (242).]

OXYRHYNCHA.

Cyrtomaia goodridgei, p. 251 ; MACGILCHRIST, Ann. Nat. Hist. (7) xv.

Eumedonius zebra, p. 344 ; LENZ, Abh. Senckenb. Ges. xxvii.

Eumedon[us] convictor, Gambier Ids., in *Echinothrix turcarum*, p. 629 ; BOUVIER & SEURAT, C.R. Ac. Sci. cxl : *Eumedonius granulosus*, Persian Gulf, p. 253 ; MACGILCHRIST, Ann. Nat. Hist. (7) xv : n. spp.

Halinus levis, p. 119, pl. xxi, figg. 1 & 1a, *truncatipes*, p. 120, pl. xxii, figg. 2 & 2a, *tumidus*, p. 121, pl. xxii, figg. 3 & 3a, var. *gracilipes*, n. var., pl. xxiii, fig. 5 ; BAKER, Tr. R. Soc. S. Austral. xxix.

Halinus gracilis, Investigator Straits, p. 124, pl. xxiii, figg. 4 & 4a ; BAKER, t. c. n. sp.

Huenia grandidieri, p. 342, pl. xlvii, figg. 2-2c ; LENZ, Abh. Senckenb. Ges. xxvii.

† This sign when prefixed to a quotation indicates a fossil form or forms. Where the character of a reference is not indicated the words "description" or "descriptive notes" are to be understood.

- Hyastenus fultoni*, off Port Jackson, p. 313, pl. xi, fig. 1; GRANT, P. Linn. Soc. N. S. Wales 1905 (2), n. sp.
- Inachus scorpio*, high and low dimorphism, p. 313, text-figg. 1-8; SMITH, Mt. Stat. Neapel xvii: *I. dorsettensis*, parasitic castration by a gregarine, pp. 406-410, pl. xxvi; SMITH, t. c.
- Lambrus pisoides*, p. 345; LENZ, Abh. Senckenb. Ges. xxvii.
- L. (Thyrolambrus) leprosus*, p. 399, (*Rhinolambrus*) *montiger*, p. 400, Red Sea; NOBILI, Bull. Mus. Paris xi (1905), n. spp.
- Mamaia* [see also *Paramaya*], nomenclature; STEBBING, P. Soc. Washington xviii, pp. 157-159.
- Menathiops bicornis*, p. 346, pl. xlvii, figg. 3-3e; LENZ, Abh. Senckenb. Ges. xxvii.
- Micippa mascarenica* var. *nodulifera*, n. var., p. 127, pl. xxiv, figg. 8 & 8a; BAKER, Tr. R. Soc. S. Austral. xxix: *M. thalia*, p. 24; STEBBING, S. African Crust. iii.
- Parahoplophrys* n. g. (near *Hoplophrys*), p. 238, *nodulosa*, Persian Gulf, p. 239; NOBILI, Bull. Mus. Paris xi (1905), n. sp.
- Paramaya* de Haan = *Maia* Lamk. = *Mamaia* Stebbing; RATHBUN, P. Soc. Washington xviii, p. 73.
- Paramicippa hispida*, S. Australia, p. 126, pl. xxiv, figg. 6 & 6a; BAKER, Tr. R. Soc. S. Austral. xxix, n. sp.
- Parthenope horrida*, p. 27; STEBBING, S. African Crust. iii.
- Scyramathia hertvoigt*, p. 25; STEBBING, t. c.
- Simocarcinus pyramidalis*, p. 342; LENZ, Abh. Senckenb. Ges. xxvii.
- Thyrolambrus* [see also *Lambrus*] *excavatus*, Investigator Straits, p. 129, pl. xxiv, fig. 7; BAKER, Tr. R. Soc. S. Austral. xxix, n. sp.

CYCLOMETOPA.

- Cyclometopa* dist. from *Catometopa* by char. of chelæ, p. 234; PRZIBRAM, Arch. Entwicklmech. xix.
- Actea alphonse* n. nom. for *A. pilosa* A. M. E., nec Stimpson, p. 235, *A. rufopunctata* var. *retusa* n. var., p. 404; NOBILI, Bull. Mus. Paris xi (1905): *A. riippellii*, p. 351; LENZ, Abh. Senckenb. Ges. xxvii: *A. granulata*, p. 30; STEBBING, S. African Crust. iii.
- A. sabæa*, p. 403, *pisigera*, p. 404, Red Sea; NOBILI, Bull. Mus. Paris xi (1905), n. spp.
- Actumnus margarodes*, Persian Gulf, p. 260; MACGILCHRIST, Ann. Nat. Hist. (7) xv: *A. margarodes*, pl. lxxvi, fig. 3; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator: *A. bonnierii*, Persian Gulf, p. 163; NOBILI, Bull. Mus. Paris xi (1905): n. spp.
- Atelecyclus*, respiration; GARSTANG, Tr. Norfolk Soc. viii (1), pp. 22-24.
- †*A. rotundatus*, post-pliocene, Palermo; CHECCHIA-RISPOLI, Natural. Sicil. xviii (4), pp. 86-89, 1 text-fig.
- Atergatopsis flavo-maculatus*, p. 349, pl. xlvii, fig. 7; LENZ, Abh. Senckenb. Ges. xxvii. *
- Benthochascon hemingi*, pl. lxxvi, figg. 4 & 4a; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator.
- Callinectes sapidus*, habits and life-history; HAY, Rep. Bureau Fisheries (1904) 1905, pp. 397-413, 4 pls.: fishery in Maryland; ROBERTS, t. c. p. 417-432.
- Cancer pagurus*, hatching; WILLIAMSON, Rep. Fish. Board Scotland xxiii, Pt. iii, pp. 154 & 155.
- †*C. proavitus*, p. 386, pl. ii, fig. 14; CUSHMAN, Amer. Natural. xxxix.
- Carcinus maenas*; THOMSON, Ann. Scott. Nat. Hist. 1905, pp. 56 & 57:

- occurrence far from sea, in Tunis; CHAIGNON, Bull. Soc. Autun xvii, p. 81.
- Carpilodes diodoreus*, Djiboutil, p. 403; NOBILI, Bull. Mus. Paris xi (1905), **n. sp.**
- Charybdis* (*Goniosoma*) *heterodon*, Red Sea, p. 401; NOBILI, t. c. **n. sp.**
- Chlorodius lippus*, Red Sea, p. 405; NOBILI, t. c. **n. sp.**
- Chlorodopsis areolata*, p. 354, pl. xlvii, fig. 8, *melanodactyla*, p. 355; LENZ, Abh. Senckenb. Ges. xxvii.
- Dilocarcinus peruvianus*, p. 454; ORTMANN in v. IHERING, Revist. Mus. Paulista vi.
- Geryon quinquedens*, p. 36; STEBBING, S. African Crust. iii.
- Gomeza distincta* var., p. 263; MACGILCHRIST, Ann. Nat. Hist. (7) xv.
- Goniosoma merguense*, p. 360, *lineatum*, p. 360, pl. xlviii, figg. 5-5c; LENZ, Abh. Senckenb. Ges. xxvii.
- Halimede hendersoni*, Persian Gulf, p. 162; NOBILI, Bull. Mus. Paris xi (1905), **n. sp.**
- Heteropanope pharaonica*, Red Sea, p. 407, text-fig. 2; NOBILI, t. c. **n. sp.**
- Leptodius edwardsii*, p. 352; LENZ, Abh. Senckenb. Ges. xxvii.
- L. veltzkowii*, Zanzibar, p. 353, pl. xlvii, figg. 6 & 6a; LENZ, t. c. **n. sp.**
- Lybia* (= *Melia*) *denticulata*, Red Sea, p. 408; NOBILI, Bull. Mus. Paris xi (1905), **n. sp.**
- Neptunus* sp. (?), p. 359, pl. xlviii, figg. 4-4c; LENZ, Abh. Senckenb. Ges. xxvii.
- N.* (*Hellenus*) *arabicus*, Persian Gulf, p. 163, *alcocki*, Red Sea, p. 401; NOBILI, Bull. Mus. Paris xi (1905), **n. spp.**
- Parathelphusa spinescens*, Yunnan Fu, p. 156, figg. 1 & 2; CALMAN, Ann. Nat. Hist. (7) xvi, **n. sp.**
- Phymodius unguatus*, p. 354; LENZ, Abh. Senckenb. Ges. xxvii.
- P. perlatus*, New Guinea, p. 487, pl. xii, fig. 3; NOBILI, Ann. Mus. Hungar. iii, **n. sp.**
- Pilodius armiger*, Red Sea, p. 405; NOBILI, Bull. Mus. Paris xi (1905), **n. sp.**
- Pilumnus*, notes on spp., p. 356; LENZ, Abh. Senckenb. Ges. xxvii.
- P. propinquus*, Persian Gulf, p. 163, *eudemoneus*, Aden, p. 405, *spongiosus*, Perim, p. 406; NOBILI, Bull. Mus. Paris xi (1905), **n. spp.**
- Portumnoides* **n. g.** (*Carcinidae*) *garstangi* **n. nom.** [!] for *nasutus* Latr., p. 448; BOHN, Bull. Sci. France Belgique xxxvi [Omitted Zool. Rec. 1902 (21).]
- Potamon* (*Potamon*) *pitarellii*, Madagascar, p. 1, fig.; NOBILI, Boll. Mus. Torino xx, No. 507: *P. (Geotelphusa) biroi*, New Guinea, p. 491, pl. xii, fig. 4; NOBILI, Ann. Mus. Hungar. iii: **n. spp.**
- Potamonautes perlatus*, p. 33; STEBBING, S. African Crust. iii.
- Potamonidae* (*Thelphusidae*), first part of Monograph, many **n. spp.**; RATHBUN, Arch. Mus. Paris vi (2), pp. 225-312, pls. ix-xviii, 1904.
- Thalamita admete*, p. 362; LENZ, Abh. Senckenb. Ges. xxvii.
- T. giardi*, Persian Gulf, p. 164, *de mani* and *bandunia*, Red Sea, p. 402; NOBILI, Bull. Mus. Paris xi (1905), **n. spp.**
- Thalamitoides tridens*, var. *spinigera* **n. var.**, p. 403; NOBILI, t. c.
- Thelphusidae* see *Potamonidae*.
- Trachycarcinus glaucus*, pl. lxxvi, figg. 1, 2, 2a; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator.
- Trichopeltarium ovale*, MACGILCHRIST, Ann. Nat. Hist. (7) xv, p. 261; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator, pl. lxxv.
- Xantho planus*, p. 31, text-fig., *gaudichaudi*, p. 32, text-fig.; PORTER, Revist. chilena ix (1).
- Xanthodes cumatodes*, Persian Gulf, p. 258; MACGILCHRIST, Ann. Nat. Hist. (7) xv, **n. sp.**

CATOMETOPA.

- †*Archæoplax signifera*, p. 383, pls. i & ii; CUSHMAN, Amer. Natural. xxxix.
Brachmotus nudus, action of salts on heart; ROGERS, J. exp. Zool. ii, pp. 237-252, 1 pl.
Camatopsis rubida, pl. lxxiv, figg. 3 & 3a; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator.
Carcinoplax longimanus, p. 37; STEBBING, S. African Crust. iii.
Ceratoplax granulosa, Gulf of Martaban; MACGILCHRIST, Ann. Nat. Hist. (7) xv, p. 263; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator, pl. lxxiv, figg. 2 & 2a, n. sp.
Cyclograpsus parvulus var. *unidens* n. var., p. 501; NOBILI, Ann. Mus. Hungar. iii.
C. lophopus, Djiboutil, p. 411; NOBILI, Bull. Mus. Paris xi (1905), n. sp.
Elamene truncata, p. 367, pl. xlviii, figg. 15 & 15a; LENZ, Abh. Senckenb. Ges. xxvii.
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†*Ommatocarcinus corioensis*, Lower Tertiary, Victoria, p. 356, pl. xxiii; HALL, P. Soc. Victoria (n. s.) xvii.
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O. jousseau mei, Red Sea, p. 233, text-fig. 2; NOBILI, t. c. n. sp.
Ostracoteres spondyli, Persian Gulf, p. 164, *cynthiæ*, Djiboutil, p. 409; NOBILI, t. c. n. spp.
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Plagusia chabrus, p. 29, text-fig.; PORTER, Revist. chilena ix (1): *P. capensis*, p. 47; STEBBING, S. African Crust. iii.
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- T. horváthi*, Japan, p. 407, pl. x, figg. 1a-h; NOBILI, t. c. n. sp.
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Ixioides n. g. (*Leucosiidae*), *cornutus*, Persian Gulf; MACGILCHRIST, Ann. Nat. Hist. (7) xv, p. 255; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator, pl. lxxiii, figg. 2-2b, n. sp.
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Philyra granigera, Persian Gulf, p. 162; NOBILI, Bull. Mus. Paris xi (1905), n. sp.

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- Cryptodromia fallax*, p. 363; LENZ, Abh. Senckenb. Ges. xxvii.
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- +*Tetracarcinus* n. g., *subquadratus*, Cretaceous, New Jersey, p. 136, pl. xv, figg. 4-6; WELLER, Rep. geol. Surv. New Jersey 1904 (1905), n. sp.

b. ANOMURA.

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[See also PORTER (229), +REMEŠ (242).]

- Galathea setosa*, South Australia, p. 267, pl. xxxiv, figg. 2-2b; BAKER,

- Tr. R. Soc. S. Austral. xxix: *G. humilis*, Red Sea, p. 396; NOBILI, Bull. Mus. Paris xi (1905): n. spp.
- Grimothea gregaria*, function of last pair of legs; CHILTON, Tr. N. Zealand Inst. xxxvii, pp. 321 & 322, pl. xix.
- Munidopsis dasypus*, p. 245, *wardeni* var. *andamanica* n. var., p. 245, *milleri*, var., p. 246, (*Orophorhynchus*) *ciliata*, p. 248; MACGILCHRIST, Ann. Nat. Hist. (7) xv: *M. trifida*, pl. lxx, fig. 1, *spinipes*, pl. lxx, fig. 2, *dasypus*, pl. lxx, fig. 3; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator.
- M. spinipes*, Bay of Bengal, p. 247; MACGILCHRIST, Ann. Nat. Hist. (7) xv, n. sp.
- Petrocheles australiensis*, p. 264, pl. xxxvi, figg. 1 & 1a; BAKER, Tr. R. Soc. S. Austral. xxix.
- Petroliathes*, notes on spp., p. 374, *maculatus*, p. 375, pl. xlvii, fig. 1; LENZ, Abh. Senckenb. Ges, xxvii.
- Polyonyx transversus*, S. Australia, p. 262, pl. xxxvi, figg. 2 & 2a; BAKER, Tr. R. Soc. S. Austral. xxix: *P. parvidens* and *pugilator*, Persian Gulf, p. 161, *pedalis*, Red Sea, p. 396; NOBILI, Bull. Mus. Paris xi (1905): n. spp.
- Porcellana rostrata*, S. Australia, p. 260, pl. xxxv, figg. 1-1b; BAKER, Tr. R. Soc. S. Austral. xxix, n. sp.
- Uroptychus glyphodactylus*, Andaman Ids.; MACGILCHRIST, Ann. Nat. Hist. (7) xv, p. 249; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator, pl. lxx, fig. 4 & pl. lxxi, figg. 1-1d, n. sp.

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- Paguridea*, general account, with keys to families and genera and list of all spp. (ex. *Lithodidae*); ALCOCK, Cat. Pagurides.
- Anapagurus* sp., p. 121; ALCOCK, t. c.
- A. bonnieri*, Persian Gulf, p. 239; NOBILI, Bull. Mus. Paris xi (1905), n. sp.
- Aniculus aniculus*, p. 94, pl. vii, fig. 6, *strigatus*, p. 97, pl. vii, fig. 4; ALCOCK, Cat. Pagurides.
- A. tenebrarum*, off Cape Comorin, p. 96, pl. vii, fig. 5; ALCOCK, t. c. n. sp.
- Birgus latro*, p. 150, pl. xvi; ALCOCK, t. c.: habits; SEURAT, Bull. Mus. Paris xi, 1905 (3), pp. 146 & 147.
- Calcinus herbstii*, p. 53, pl. v, fig. 4, var. *lividus*, p. 55, *elegans*, p. 55, pl. v, fig. 2, *gaimardii*, p. 56, pl. v, fig. 3, *terrae-reginae*, p. 57, pl. v, fig. 7, *lutens*, p. 58, pl. v, fig. 5; ALCOCK, Cat. Pagurides.
- Cancellus investigatoris*, off Ceylon; ALCOCK, t. c. p. 77, pl. v, fig. 8; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator, pl. lxxix, figg. 3 & 3a, n. sp.
- Catapagurus ensifer*, p. 115, pl. xiii, fig. 3; ALCOCK, Cat. Pagurides.
- Cestopagurus olfaciens*, Maldiva Ids., ALCOCK, Fauna Maldiva ii (4), p. 835; ALCOCK, Cat. Pagurides, p. 116, n. sp.
- Cheiroplatea* sp., p. 242; MACGILCHRIST, Ann. Nat. Hist. (7) xv.
- Chiroplatea macgilchristi*, Bay of Bengal; ALCOCK, Cat. Pagurides, p. 18, pl. i, fig. 3; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator, pl. lxxix, figg. 2 & 2a, n. sp.
- Chlaenopagurus andersoni*, identified with *Paguroopsis typica*, p. 28; ALCOCK, Cat. Pagurides.
- Clibanarius clibanarius*, p. 43, pl. iv, fig. 1, *infraspinatus*, p. 44, *padavensis*, p. 44, pl. iv, fig. 2, *striolatus*, p. 46, pl. iv, fig. 7, *aquabilis*, var. *merguensis*, p. 46, pl. iv, fig. 5, *humilis*, p. 47, pl. iv, fig. 6, *arethusa*, p. 48, pl. iv, fig. 3, *corallinus*, p. 48, pl. v, fig. 1, *cruentatus*, p. 50; ALCOCK, t. c.

- C. albicinctus*, off Cape Comorin, p. 50, pl. iv, fig. 4; ALCOCK, t. c. **n. sp.**
- Cenobita clypeatus*, p. 142, pl. xv, figg. 1 & 1a, *rugosus*, p. 143, pl. xiv, figg. 3 & 3a, *perlatus*, p. 145, pl. xiv, figg. 2 & 2a, *caripes*, p. 146, pl. xiv, fig. 1; ALCOCK, t. c.: *C. perlata*, habits; SEURAT, Bull. Mus. Paris x, 1904 (5), pp. 238-242.
- Diogenes diogenes*, p. 62, pl. xv, fig. 3, *merguiensis*, p. 63, pl. xv, fig. 2, *custos*, p. 64, pl. vi, fig. 1, var. *affinis*, p. 65, pl. vi, fig. 2, var. *violaceus*, p. 66, pl. vi, fig. 4, var. *planimanus*, p. 66, pl. vi, fig. 3, *miles*, p. 67, pl. vi, fig. 5, *avarus*, p. 68, pl. vi, fig. 6, *costatus*, p. 70, pl. vi, fig. 7, *rectimanus*, p. 71, pl. vi, fig. 8; ALCOCK, Cat. Pagurides.
- D. gardineri*, Maldive Ids., p. 830, pl. lxvii, fig. 1; ALCOCK, Fauna Maldive ii (4): *D. investigatoris*, p. 71, pl. vi, fig. 9, *bicristimanus*, p. 72, pl. vii, fig. 1, *gardineri*, p. 73, pl. vii, fig. 3, Indian Seas; ALCOCK, Cat. Pagurides: **n. spp.**
- Eupagurus pergranulatus*, p. 125, pl. xi, fig. 1, *zebra*, p. 126, pl. xi, fig. 5, sp.?, p. 133; ALCOCK, t. c.: *E. hirtimanus*, p. 377; LENZ, Abh. Senckenb. Ges. xxvii.
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- Glaucothoe* sp., p. 23; ALCOCK, t. c.: *G.*, spp. as larvæ of *Paguride*; BOUVIER, C.R. Ac. Sci. cxli, p. 644: *G.*, relations of different "species" to types of *Paguride*, key to "spp." etc.; BOUVIER, Bull. Mus. Monaco li.
- G. hendersoni*, Indian Ocean, p. 5; BOUVIER, t. c. **n. sp.**
- Lithodes agassizii*, p. 243; MACGILCHRIST, Ann. Nat. Hist. (7) xv: *L. agassizii*, pl. lxviii & pl. lxix, fig. 1; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator.
- Nematopagurus muricatus*, p. 111, pl. xii, fig. 5; ALCOCK, Cat. Pagurides.
- N. gardineri*, Maldive Ids., p. 834, pl. lxviii, fig. 3; ALCOCK, Fauna Maldive ii (4): *indicus*, p. 109, pl. xii, fig. 4, *gardineri*, p. 110, pl. xii, fig. 2, *scutellichelis*, p. 112, pl. xii, fig. 3, *squamichelis*, p. 113, pl. xii, fig. 1, Indian Seas; ALCOCK, Cat. Pagurides: **n. spp.**
- Neolithodes capensis*, Cape of Good Hope, p. 70, pls. xix & xx; STEBBING, S. African Crust. iii, **n. sp.**
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- P. balanophilus*, p. 33, pl. iii, fig. 1, *calvus*, p. 35, pl. i, fig. 4, *mundus*, p. 35, pl. iii, fig. 5, *incomitatus*, p. 39, pl. iii, fig. 4, Indian Seas; ALCOCK, Cat. Pagurides: *P. brevisrostris*, p. 256, pl. xxxiii, figg. 1 & 1a, *sulcatus*, p. 258, pl. xxxiv, figg. 1 & 1a, S. Australia; BAKER, Tr. R. Soc. S. Austral. xxix: *P. aciculus*, off Port Jackson, p. 319, pl. xi, figg. 3 & 3a, GRANT, P. Linn. Soc. N. S. Wales 1905 (2): **n. sp.**
- Pagurodes lineatus*, p. 107, pl. xii, fig. 6; ALCOCK, Cat. Pagurides.
- Paguropsis typica*, p. 28, pl. ii; ALCOCK, t. c.
- Pagurus punctulatus*, p. 81, pl. viii, fig. 1, *vulnerans*, p. 83, *setifer*, p. 83, pl. viii, fig. 3, *fabimanus*, p. 84, pl. viii, fig. 2, *euopsis*, p. 86, pl. ix, fig. 2, *guttatus*, p. 87, pl. ix, fig. 1, *deformis*, p. 88, pl. ix, fig. 4, *varipes*, p. 90, pl. ix, fig. 7, *asper*, p. 90, pl. ix, fig. 5, *dearmatus*, p. 91, pl. ix, fig. 6, *imbricatus*, p. 92, pl. ix, fig. 8, *hessii*, p. 93, pl. viii, fig. 4; ALCOCK, t. c.: *P. spinimanus*, p. 483; NOBILI, Ann. Mus. Hungar. iii.
- P. wood-masoni*, Maldive Ids., p. 831; ALCOCK, Fauna Maldive ii (4): *P. wood-masoni*, Andaman Ids., p. 85, pl. ix, fig. 3; ALCOCK, Cat. Pagurides, **n. sp.**

- Parapagurus pilosimanus*, p. 99, pl. x, fig. 1, *minutus*, p. 101, pl. x, fig. 3, *andersoni*, p. 102, pl. x, fig. 2, var. *brevimanus*, p. 103; ALCOCK, t. c.
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T. pernicus, Persian Gulf, p. 160; NOBILI, Bull. Mus. Paris vi (1905), n. sp.

HIPPIDEA.

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c. MACRURA.

- Macrura, branchial system; COUTIERE, C.R. Ac. Sci. cxli, pp. 64-66.
 Macrura, morphology; COUTIERE, t. c. pp. 127-130.

NEPHROPSIDEA.

[See also ORTMANN in WILLIAMSON (326), HAY (132).]

- Astacus* spp., atavistic regeneration; SCHULTZ, Arch. Entwickmech. xx, pp. 38-47, pl. ii: *A.*, in South Tyrol; HUBER, Arch. Hydrobiol. i (1), p. 72: *A. fluviatilis* in Hereford; BLAKE, Tr. Woolhope Club 1902/1904, p. 85: in Worcester; REA, Tr. Worcester Club 1897-99, p. 11 (1899): legislative protection in France; GALBERT, C.R. Ass. Franc. 1904 (1905), p. 755: regeneration; BIBERHOFER, Arch. Entwickmech. xix, pp. 133-137, 5 text-figg.: *A. japonicus*, parasite of; PIERANTONI, Annuar. Mus. Univ. Napoli i (31), 3 pp., 1 pl.
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Cambarus, revision, with keys to spp., and distribution; ORTMANN, t. c. pp. 99-136, pl. iii: notes on spp.; ORTMANN, Ann. Carnegie Mus. iii (2), pp. 387-406: *C. propinquus*, regeneration; ZELENY, J. exp. Zool. ii, pp. 347-369, 1 text-fig.
C. hinei, Louisiana, p. 401, fig. 1; ORTMANN, Ohio Natural. vi: *C. monongulensis*, Pennsylvania, p. 395; ORTMANN, Ann. Carnegie Mus. iii (2): *C. (Procambarus) williamsoni*, Guatemala, p. 439, text-figg. 1-3; ORTMANN, t. c. (3): n. spp.
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- Rep. U. S. Fish. Comm. xxix for 1903 (1905), pp. 141-147 : artificial rearing ; SHERWOOD, t. c. pp. 149-174, 3 pls. : causes of death in artificial rearing ; GORHAM, t. c. pp. 175-193, 3 pls. : phototropism of larvae, HADLEY, Science (n. s.), xii, pp. 675-678.
- Nephrops norvegicus*, notes on fishery, Ireland ; HOLT, Rep. Fisheries Ireland 1902-1903, Pt. ii, pp. xviii-xix : abnormal chela ; PATTERSON, Zoologist (4) ix, p. 350 & text-fig.
- N. arafurensis*, Malay Seas, p. 587 ; DE MAN, Tijdschr. Nederland. Dierk. Ver. (2) ix, **n. sp.**
- Procambarus n. subg.* of *Cambarus* (q.v.), p. 437 ; ORTMANN, Ann. Carnegie Mus. iii (3).

ERYONIDEA.

- Eryoneicus puritani* ; BOUVIER, Bull. Mus. Monaco xxviii, p. 6.
- E. faxoni*, E. Atlantic ; BOUVIER, C.R. Ac. Sci. cxl, p. 481, and Bull. Mus. Monaco xxviii, p. 5 : *alberti*, E. Atlantic ; BOUVIER, C.R. Ac. Sci. cxli, p. 645, and Bull. Mus. Monaco lv, p. 2 : *spinoculatus*, Terceira ; BOUVIER, Bull. Mus. Monaco xxviii, p. 7 : **n. spp.**
- Pentacheles trispinosus*, Malay Seas, p. 587 ; DE MAN, Tijdschr. Nederland. Dierk. Ver. (2) ix, **n. sp.**
- Polycheles agassizi* = *P. typhlops*, p. 480 ; BOUVIER, C.R. Ac. Sci. cxl : *P.*, notes on spp., p. 3, *debilis* var. *armatus n. var.*, p. 4 ; BOUVIER, Bull. Mus. Monaco xxviii.
- P. dubius*, p. 490, *grimaldii*, p. 481, Azores ; BOUVIER, C.R. Ac. Sci. cxl : *P. dubius*, p. 4, *grimaldii*, p. 4 ; BOUVIER, Bull. Mus. Monaco xxviii : *P. eryoniformis*, E. Atlantic ; BOUVIER, C.R. Ac. Sci. cxli, p. 644, and Bull. Mus. Monaco lv, p. 2 : **n. spp.**

LORICATA.

- Arctus crenulatus*, Madeira ; BOUVIER, C.R. Ac. Sci. cxl, p. 480, and Bull. Mus. Monaco xxviii, p. 2 : *A. gibberosus*, p. 588, *bicuspidatus*, p. 589, Malay Seas ; DE MAN, Tijdschr. Nederland. Dierk. Ver. (2) ix : **n. spp.**
- Ibacus alticrenatus* var. *septemdentatus n. var.*, p. 322, pl. xi, fig. 2 ; GRANT, P. Linn. Soc. N. S. Wales 1905 (2).
- Palinurus* sp., physiology of heart, p. 151 ; CARLSON, Biol. Bull. viii : *P. vulgaris*, number of eggs ; OKELL, P. Liverp. biol. Soc. xix, pp. 16 & 17.
- Panulirus*, notes on spp. ; BOUVIER, Bull. Mus. Monaco xxix.
- Puer atlanticus*, Cape Verde Ids. ; BOUVIER, C.R. Ac. Sci. cxl, p. 479, and Bull. Mus. Monaco xxviii, p. 2, **n. sp.**
- Scyllarus paulsoni n. nom.* for *S. gundlachi* Paulson, nec v. Martens, p. 395 ; NOBILI, Bull. Mus. Paris xi (1905).
- S. sordidus*, Persian Gulf, p. 160, *pumilus*, Red Sea, p. 395 ; NOBILI, Bull. Mus. Paris xi (1905) : **n. spp.**

THALASSINIDEA.

[See also +WEGNER (321).]

- Anophthalmarius n. g.* (*Axiidae*), p. 593, *eccoptodactylus*, Malay Seas, p. 594 ; DE MAN, Tijdschr. Nederland. Dierk. Ver. (2) ix, **n. sp.**
- Axiopsis picteti* var. *spinimana n. var.*, Malay Seas, p. 597 ; DE MAN, t. c.
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- Schizopoda*, notes on spp. from "Oceana" Exp.; HOLT & TATTERSALL, Ann. Nat. Hist. (7) xvi, pp. 1-10.
- Schizopoda* of plankton in Bay of Biscay; HOLT & TATTERSALL, Tr. Linn. Soc. (2) Zool. x, pp. 103-129.
- Schizopoda*, morphology; COUTIERE, C.R. Ac. Sci. cxli, pp. 127-130.

- Arachnomysinae* n. subfam. of *Mysida*, p. 128; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- Arachnomysis leuckartii*, ♀, p. 445, pl. xiv, figg. 1-6; THIELE, Zool. Jahrb. Suppl. viii.
- Bentheuphausia* sp., p. 112; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- Boreomysinae* n. subfam. of *Mysida*, p. 130; HOLT & TATTERSALL, t. c.
- Boreomysis arctica*, p. 130, *microps*, p. 130; HOLT & TATTERSALL, t. c.
- B. subpellucida*, p. 8, figg. 5-8, *semioacea*, p. 9, figg. 9-11, N. Atlantic; HANSEN, Bull. Mus. Monaco xxx, n. spp.
- Cesaromysis hispida*, p. 115; STEBBING, S. African Crust. iii.
- Chunomysis* n. g. (*Mysida*) *diadema*, N.E. Atlantic, p. 128, pl. xix, figg. 1-4, pl. xxv, figg. 1-7; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii, n. sp.
- Dactylerythrops* n. g. (*Mysida*) *dactylops*, N.E. Atlantic, p. 121, pl. xxii; HOLT & TATTERSALL, t. c. n. sp.
- Echinomysis* n. g. (*Mysida*) *chuni*, Antarctic and Indian Ocean, p. 151, 2 text-figg.; ILLIG, Zool. Anz. xxix, n. sp.
- Euchætomera fowleri*, N.E. Atlantic, p. 123, pl. xxiv, figg. 1-3; HOLT & TATTERSALL, Rep. Fish. Ireland, 1902-03, Pt. ii: *E. fowleri*, p. 104, text-fig.; HOLT & TATTERSALL, Tr. Linn. Soc. (2) Zool. x, n. sp.
- Eucopia* sp., sense-organ; DOHRN, Zool. Anz. xxix, pp. 347-352, 4 text-figg.: *E. australis*, p. 5, fig. 1, *sculpticiruda*, p. 7, fig. 4; HANSEN, Bull. Mus. Monaco xxx: *E. unguiculata*, p. 3, *australis*, p. 6; HANSEN, op. cit. xlii.
- E. intermedia*, N. Atlantic, p. 5, figg. 2 & 3; HANSEN, op. cit. xxx, n. sp.
- Euphausia*, notes on spp., p. 7, key to some spp., p. 10, *mülleri*, p. 11, *dionedeae*, p. 16, *gibba*, p. 17; HANSEN, Bull. Mus. Monaco xlii: *E. latifrons*, p. 112; STEBBING, S. African Crust. iii.
- E. recurva*, p. 13, *mutica*, p. 14, *brevia*, p. 15, N. Atlantic; HANSEN, Bull. Mus. Monaco xlii: *E. lanei*, N.E. Atlantic, p. 102, pl. xxiv, figg. 6-9; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii: n. spp.
- Euphausiida*, notes on spp., p. 452; THIELE, Zool. Jahrb. Suppl. viii.
- Euphausiinae* n. subfam. of *Euphausiidae*, p. 101; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- Gnathophausia calcarata*, luminous gland, p. 662, text-figg. 1 & 2; ILLIG, Zool. Anz. xxviii.
- G. drepanephora*, N.E. Atlantic, p. 113, pl. xviii; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii: *G. drepanephora*, p. 9, pl. ii; HOLT & TATTERSALL, Ann. Nat. Hist. (7) xvi, n. sp.
- Hypererythrops* n. g. (*Mysida*), p. 119, *serriventer*, N.E. Atlantic, p. 120, pl. xxiii & pl. xxiv, fig. 4; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii, n. sp.
- Katerythrops* n. g. (*Mysida*) *oceanæ*, N.E. Atlantic, p. 117, pl. xx; HOLT & TATTERSALL, t. c.: *K. oceanæ*, p. 7, pl. i; HOLT & TATTERSALL, Ann. Nat. Hist. (7) xvi, n. sp.
- Lophogaster typicus*, p. 449, pl. xiv, figg. 9-14; THIELE, Zool. Jahrb. Suppl. viii.
- Meganyctiphanes* n. g. (*Euphausiida*), *norvegica*, p. 105, pl. xvi; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- Meterythrops picta*, N.E. Atlantic, p. 116, pl. xix, figg. 5-7, pl. xxv, figg. 8 & 9; HOLT & TATTERSALL, t. c. n. sp.
- Mysideis insignis*, p. 127, pl. xxiv, fig. 5; HOLT & TATTERSALL, t. c.
- M. (?) farrani*, N.E. Atlantic, p. 127; HOLT & TATTERSALL, t. c. n. sp.
- Mysis* spp., experiments on vibration of "auditory" setæ; MARAGE, C.R. Ac. Sci. cxli, p. 732.

- Nematobranchion* n. nom. for *Nematodactylus*, preocc., *boëpis*, p. 153, pl. xxvi; CALMAN, Rep. Fish. Ireland 1902-03, Pt. ii.
- Nematoscelinae* n. subfam. of *Euphausiidae*, p. 107; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- Nematoscelis*, notes on spp., p. 27; HANSEN, Bull. Mus. Monaco xxx: *N. microps*, p. 28, *tenella*, p. 30; HANSEN, op. cit. xlii.
- Nyctiphanes couchii*, p. 104, pl. xvii; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii: *N. australis*, p. 113; STEBBING, S. African Crust. iii.
- Paramblyops* n. g. (*Mysidae*), p. 124, *rostrata*, N.E. Atlantic, p. 125, pl. xxi; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii, n. sp.
- Parerythrops obesa*, p. 122; HOLT & TATTERSALL, t. c.
- Pseudomma roseum*, p. 74; PATIENCE, Tr. Soc. Glasgow vii (1).
- P. calloplura*, p. 126, *kempi*, p. 126; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii, n. spp.
- Siriella thompsonii*, p. 447, pl. xiv. figg. 7 & 8; THIELE, Zool. Jahrb. Suppl. viii.
- Stylocheiron*, notes on spp., p. 30; HANSEN, Bull. Mus. Monaco xxx: *S. longicorne*, p. 109, *chelifer*, p. 110; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- Thysanoëssa parva*, p. 27; HANSEN, Bull. Mus. Monaco xlii: *T. longicaudata*, p. 107, pl. xv, *gregaria*, p. 108; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- T. parva*, N. Atlantic, p. 25, figg. 22-24; HANSEN, Bull. Mus. Monaco xxx, n. sp.
- Thysanopoda*, key to spp. from Atlantic, p. 12, *pectinata*, p. 16, fig. 12; HANSEN, Bull. Mus. Monaco xxx: *T. vulgaris*, p. 20, *acutifrons*, p. 22, *distinguenda*, p. 24, *pectinata*, p. 25; HANSEN, op. cit. xlii: *T. obtusifrons*, p. 452, pl. xix, figg. 15 & 16; THIELE, Zool. Jahrb. Suppl. viii.
- T. vulgaris*, p. 15, *distinguenda*, p. 17, fig. 13, *lateralis*, p. 18, figg. 14-16, *insignis*, p. 19, figg. 17-19, *egregia*, p. 22, figg. 20 & 21, N. Atlantic; HANSEN, Bull. Mus. Monaco xxx: *T. æqualis*, p. 18, N. Atlantic; HANSEN, op. cit. xlii: *T. cornuta*, S. Atlantic, p. 663, text-figg. 1-3; ILLIG, Zool. Anz. xxviii: *T. acutifrons*, N.E. Atlantic, p. 102; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii: n. spp.

3. STOMATOPODA.

[See also PAULMIER (220).]

- Larvæ off W. of Ireland; TATTERSALL, Rep. Fish. Ireland 1902-1903, Pt. ii, App. vii (1905), pp. 211-213.
- Larvæ from Irish Sea, p. 214, fig. 2; A. SCOTT, P. Liverp. biol. Soc. xix.
- Gonodactylus*, notes on spp., p. 386, *spinosus*, p. 387, pl. xlvii, fig. 12; LENZ, Abh. Senckenb. Ges. xxvii: *G. demani*, p. 11; NOBILI, Boll. Mus. Torino xx, No. 506: *G. styliferus*, p. 34, text-fig.; PORTER, Revist. chilena ix (1).
- G. fimbriatus*, Zanzibar, p. 388, pl. xlvii, fig. 11; LENZ, Abh. Senckenb. Ges. xxvii, n. sp.
- Lysioquilla digueti*, Lower California, p. 174 & text-figg.; COUTIERE, Bull. Soc. Philom. vii (3), n. sp.
- Protosquilla glabra*, Zanzibar, p. 388, pl. xlvii, fig. 13; LENZ, Abh. Senckenb. Ges. xxvii, n. sp.
- Squilla desmaresti*, in North Sea, p. 218; VAN BREEMEN, Tijdschr. Nederland. Dierk. Ver. (2) ix.

4. CUMACEA.

[See also BRADY (36), PAULMIER (220), SCOTT (266).]

- Bathycuma*, p. 17, key to spp., p. 18, *brevirostris*, p. 18; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.
- B. longirostris*, Malay Seas, p. 9, pl. ii, figg. 13 & 14; CALMAN, Cumacea Siboga, n. sp.
- Bodotria scorpionides*, synonymy, p. 13; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i: *B. sp.*, p. 5; CALMAN, Cumacea Siboga.
- Campylaspis*, notes on spp., p. 34; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.
- C. rostrata*, W. of Ireland, p. 35, pl. ii, figg. 35-38; CALMAN, t. c. n. sp.
- Ceratocuma* n. g. (*Ceratocumidae*), p. 37, *horrida*, p. 37, pl. iv, figg. 57-75; CALMAN, t. c. n. sp.
- Ceratocumidae* n. fam., p. 37; CALMAN, t. c.
- Cumella gracillima*, W. of Ireland, p. 23, pl. i, figg. 5-14; CALMAN, t. c. n. sp.
- Cumellopsis* n. g. (*Nannastacidae*), p. 28, *helga*, p. 28, pl. ii, figg. 20-34; CALMAN, t. c. n. sp.
- Cyclaspis peraculpta*, p. 3, pl. i, figg. 1-3, *siboga*, p. 4, pl. i, figg. 4-6, Malay Seas; CALMAN, Cumacea Siboga, n. spp.
- Cyclaspoides sarsi*, p. 15; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i: *C. sp.*, p. 6; CALMAN, Cumacea Siboga.
- Diastylis*, notes on spp., p. 45; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.
- Diastylis tubulicauda*, W. of Ireland, p. 46, pl. v, figg. 82-86; CALMAN, t. c.: *D. cingulatus*, Malay Seas, p. 19, pl. ii, figg. 26-29; CALMAN, Cumacea Siboga: n. spp.
- Diastylopsis* sp., p. 23; CALMAN, t. c.
- Hemilamprops*, notes on spp., p. 41; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.
- Heterocuma weberi*, Malay Seas, p. 6, pl. i, figg. 7-12; CALMAN, Cumacea Siboga, n. sp.
- Iphinoë trispinosa*, p. 15, *serrata*, p. 16; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.
- Leucon siphonatus*, W. of Ireland, p. 19, pl. i, figg. 2-4; CALMAN, t. c. n. sp.
- Nannastacidae*, key to genera, p. 22; CALMAN, t. c.
- Nannastacus suhmii*, p. 12; CALMAN, Cumacea Siboga.
- N. brevicaudatus*, W. of Ireland, p. 26, pl. i, figg. 15-19; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i: *N. hansenii*, p. 11, text-fig. 1, *a-e*, *pardus*, p. 13, text-fig. 2, *a-c*, *brachydactylus*, p. 14, text-fig. 3, *a-e*, Malay Seas; CALMAN, Cumacea Siboga: n. spp.
- Paradiastylis longipes*, Malay Seas, p. 21, text-fig. 4, *a-i*; CALMAN, t. c. n. sp.
- Platyspis*, key to spp., p. 42; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.
- Platyspis orbicularis*, W. of Ireland, p. 43, pl. v, figg. 77-81; CALMAN, t. c. n. sp.
- Platyruma* n. g. (*Nannastacidae*), p. 30, *holtii*, W. of Ireland, p. 30, pl. iii, figg. 39-56; CALMAN, t. c. n. sp.
- Pseudodinastylis* n. g. (*Diastylidae*) *ferox*, Malay Seas, p. 16, pl. ii, figg. 15-25; CALMAN, Cumacea Siboga, n. sp.
- Vauntomponia*, p. 16, *cristata*, p. 17, pl. i, fig. 1; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.

5. TANAIIDACEA.

[See also PAULMIER (220).]

- Tanaidacea*, revision of nomenclature of spp. described in Bate & Westwood's "British Sessile-eyed Crustacea"; NORMAN, Ann. Nat. Hist. (7) xvi, pp. 78-95.
- Tanaidacea* of North America, all spp. described and figured; RICHARDSON, Bull. U. S. Mus. liv.
- Apseudes hibernicus*, p. 38, pl. ix, figg. 4-7; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- Heterotanais anomalus*, p. 336, pl. xxi, figg. 29-35; SMITH, Mt. Stat. Neapel xvii.
- H. magnus*, Naples, p. 336, pl. xxi, figg. 36-39; SMITH, t. c.: *H. crassicornis*, Gulf of Manaar, p. 4, pl. i, A; STEBBING, Rep. Ceylon Pearl Fisheries iv : n. spp.
- Leptochelia dubia*, p. 333, pl. xx, figg. 1-17; SMITH, Mt. Stat. Neapel xvii : *L. lifuensis*, p. 7, pl. i, c; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- L. mercantilia*, p. 335, pl. xx, figg. 18-23, *mergellinae*, p. 336, pl. xx, figg. 24-28; SMITH, Mt. Stat. Neapel xvii : *L. mirabilis*, Gulf of Manaar, p. 6, pl. i, B; STEBBING, Rep. Ceylon Pearl Fisheries iv : n. spp.
- Pancolus n. g.* (*Tanaidæ*) *californiensis*, California, p. 367, text-figg. 1-10; RICHARDSON, P. U. S. Mus. xxviii, n. sp.
- Tanais gracilis*, p. 3, pl. i, D; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- T. normani*, California, p. 369, text-figg. 11-13; RICHARDSON, P. U. S. Mus. xxviii, n. sp.
- Tunaopsis laticaudata*, p. 41, pl. ix, figg. 9 & 10; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- Typhlotanais proctagon*, W. of Ireland, p. 601; TATTERSALL, Rep. Brit. Ass. lxxiv 1904 (1905) : *T. proctagon*, p. 3, pl. i, figg. 1-9; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905) : n. sp.

6. ISOPODA.

[See also BRADY (36), MEISSNER (181), PAULMIER (220), SCOTT (266) & (269), SCOURFIELD (274), SMITH (285), WOLTERSTORFF (340).]

Isopoda, revision of nomenclature of spp. described in Bate & Westwood's "British Sessile-eyed Crustacea"; NORMAN, Ann. Nat. Hist. (7) xvi, pp. 78-95.

ASELLOTA.

[See also HUBER (141), SNETHLAGE (289).]

- Asellota* of N. America, descr. and figg. of all spp. (only n. gg. and spp. noted below); RICHARDSON, Bull. U. S. Mus. liv.
- Asellota*, morphology and classification; HANSEN, P. Zool. Soc. London 1904, ii (2) (1905), pp. 302-331.
- Eurycope longipes*, W. of Ireland, p. 30, pl. x, figg. 1-8; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905), n. sp.
- Iera marina*, p. 51, pl. ix, fig. 11, *nordmanni*, p. 51, pl. ix, fig. 12; TATTERSALL, t. c.
- Ilyarachna plunketti*, W. of Ireland, p. 602; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905) : *I. plunketti*, p. 28, pl. vii, figg. 1-9; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905) : n. spp.
- Iolella* n. nom. for *Tole* Ortmann (misprint for *Iole*, preocc.), p. 457; RICHARDSON, Bull. U. S. Mus. liv.

- I. sarsi*, Alaska, p. 467, text-fig. 523; RICHARDSON, t. c.: *I. alascensis*, N. Pacific, p. 464, text-fig. 519; BENEDICT in RICHARDSON, t. c.: *n. spp.*
- Ischnosoma greenii*, W. of Ireland, p. 602; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905): *I. greenii*, p. 20, figg. 1-6; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905), *n. sp.*
- Jaropsis curvicornis*, p. 51, pl. xi, c; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- Janira* (?) *nana*, Gulf of Manaar, p. 50, pl. iii, c; STEBBING, t. c. *n. sp.*
- Lipomera n. g.* (*Lipomeridae*) *lamellata*, W. of Ireland, p. 602; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905): *L. lamellata*, p. 33, pl. viii, figg. 1-14; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905): *n. sp.*
- Lipomeridae n. fam.* near *Munnopsidae*, p. 602; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905).
- Metamunna n. g.* (near *Pleurogonium*) *typica*, W. of Ireland, p. 602; TATTERSALL, t. c.: *M. typica*, p. 18, pl. ix, figg. 1-3; TATTERSALL, Fisheries Ireland Sci. Invest. 1904, ii (1905): *n. sp.*
- Munna caeca*, S. California, p. 483, text-figg. 541-543; RICHARDSON, Bull. U. S. Mus. liv: *M. schauinslandi*, Chatham Ids., p. 372, pl. xiv, figg. 1-12; SARS, Zool. Jahrb. Syst. xxi: *n. spp.*
- Munnopsis murrayi*, p. 73, pl. v, fig. 8; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- M. oceanica*, W. of Ireland, p. 23, pl. v, figg. 1-7; TATTERSALL, t. c. *n. sp.*
- Munnopsoides n. g.* (near *Munnopsis*) *beddardi*, W. of Ireland, p. 602; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905): *M. beddardi*, p. 26, pl. vi, figg. 1-8; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905): *n. sp.*
- Parasellidae n. fam.*, p. 315; HANSEN, P. Zool. Soc. London 1904, ii (1905).
- Stenetriidae n. fam.*, p. 315; HANSEN, t. c.
- Stenetrium*, p. 303, key to spp., p. 316, *armatum*, p. 318, pl. xix, figg. 1a-d, *fractum*, p. 319, *haswelli*, p. 321, *stebbingii*, p. 325, *inermis*, p. 329; HANSEN, P. Zool. Soc. London 1904, ii (2) (1905).
- S. mediterraneum*, Sicily, p. 320, pl. xix, figg. 2a-h, *serratum*, West Indies, p. 323, pl. xix, figg. 3a-d, pl. xx, fig. 1a, *occidentale*, West Indies, p. 324, pl. xx, figg. 2a-n, *antillense*, West Indies, p. 326, pl. xx, figg. 3a-i, pl. xxi, figg. 1a-e, *siamense*, Siam, p. 327, pl. xxi, figg. 2a-i; HANSEN, P. Zool. Soc. London 1904, ii (2) (1905): *S.*, key to spp., p. 54, *chiltoni*, Gulf of Manaar, p. 54, pl. xii, a; STEBBING, Rep. Ceylon Pearl Fisheries iv: *n. spp.*
- Tole* [see also *Iolella*] *holmesi*, Alaska, p. 216, text-fig. 5; RICHARDSON, Bull. Bureau Fisheries xxiv, *n. sp.*

PHREATOICOIDEA.

[See CHILTON (70).]

FLABELLIFERA.

[See also †REMÉŠ (242).]

- Flabellifera* of N. America, descr. and figg. of all spp. (only *n. gg.* and spp. noted below); RICHARDSON, Bull. U. S. Mus. liv.
- Ega symmetrica*, Alaska, p. 209, text-fig. 1; RICHARDSON, Bull. Bureau Fisheries xxiv: *E. ommatophylax* Galle, p. 21, pls. iv & v, a; STEBBING, Rep. Ceylon Pearl Fisheries iv: *n. spp.*
- Egidae*, key to gen., p. 20; STEBBING, t. c.
- Alcirona papuana*, p. 502, pl. xiii, fig. 5, NOBILI, Ann. Mus. Hungar. iii, *n. sp.*

- Ancinella* n. g. (*Sphæromidæ*), p. 114, *profunda*, N. Atlantic, p. 132; HANSEN, Quart. J. Micr. Sci. xlix, n. sp.
- Anciniidæ* n. fam.; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905), p. 601, and Fisheries, Ireland, Sci. Invest. 1904, ii (1905), p. 11.
- Anilocra frontalis*, hepatic cells; GUIEYSSE, Bull. Soc. Philom. vii (4), pp. 207-211, 1 text-fig.: *A. dimidiata*, p. 26; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- Argathona* n. g. (*Argathonidæ*) *normani*, Gulf of Manaar, p. 17, pl. iii, a; STEBBING, t. c. n. sp.
- Argathonidæ* n. fam., p. 16; STEBBING, t. c.
- Bathycopea* n. g. (*Anciniidæ*), *typhlops*, W. of Ireland, p. 601; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905): *B. typhlops*, p. 12, pl. iii, figg. 1-13; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905): n. sp.
- Cæcosphæroma*, p. 375, *vires*, p. 376, pl. xiv, figg. 3-3b, pl. xv, figg. 3 & 9; DOLLFUS, Ann. Sci. Nat. (8), xx.
- Cassinididæ* n. g. (*Sphæromidæ*), type *ovalis* Say, p. 113; HANSEN, Quart. J. Micr. Sci. xlix. [See also *Cassinidiscæ*.]
- Cassinidinopsis* n. g. (*Sphæromidæ*), type *emarginata* Guérin, p. 106; HANSEN, t. c.
- Cassinidiscæ* n. g. for *lunifrons* Rehdn. etc., p. 272, cancelled as syn. of *Cassinidinidæ*, p. ix; RICHARDSON, Bull. U. S. Mus. liv.
- Cilicæa caudata*, *gilliana*, *sculpta*, and *cordata* referred to *Paracerceis*, p. ix; RICHARDSON, Bull. U. S. Mus. liv: *C.*, key to spp., p. 34, *latreilli*, p. 36, pls. iii, b and viii; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- C. whiteleggei*, p. 39, pl. ix, A & B, *beddardi*, p. 40, pl. x, A & B, sp., juv., p. 42, pl. ix, c, Gulf of Manaar; STEBBING, t. c. n. spp.
- Cilicæopsis* n. g. (*Sphæromidæ*), type *granulata* Whitelegge, p. 104; HANSEN, Quart. J. Micr. Sci. xlix.
- Cirolana kirtipes*, habits, p. 25; BRIAN, Boll. Naturalista xxv (3): *C.*, key to European spp., p. 340, *borealis*, p. 342, *neglecta*, p. 345, *æcea*, p. 348, *microphthalmia*, p. 349, *cranchii*, p. 350, pl. xxxiii, fig. 3a, *hanseni*, p. 353, pl. xxxiii, figg. 4a-4d, pl. xxxiv, figg. 1a-1k; HANSEN, J. Linn. Soc. Zool. xxix: *C. sulcaticauda*, p. 11, *parva*, p. 12; STEBBING, Rep. Ceylon Pearl Fisheries iv: *C. borealis*, p. 43, pl. ix, fig. 8; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- C. gallica* Roscoff, p. 344, pl. xxxiii, figg. 1a-1d, *schmidtii*, N. Atlantic, p. 347, pl. xxxiii, figg. 2a-2c; HANSEN, J. Linn. Soc. xxix: *C. chiltoni*, San Francisco, p. 91, text-fig. 73; RICHARDSON, Bull. U. S. Mus. liv: n. spp.
- Cirolaninæ*, key to genera, p. 339; HANSEN, J. Linn. Soc. xxix.
- Conilera cylindræa*, p. 355; HANSEN, t. c.
- Conilorpheus* n. g. (*Eurydicidæ*) *herdmani*, Gulf of Manaar, p. 13, pl. ii, a; STEBBING, Rep. Ceylon Pearl Fisheries iv, n. sp.
- Cymodoce bicarinata*, p. 42, pl. x, c, *inornata*, p. 43; STEBBING, t. c.: *C. truncata* (= *Sphæroma inerme* Tatt.), p. 6, pl. ii, figg. 1-9, *granulatum*, p. 10; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- Disercois* n. g. (*Sphæromidæ*) *granulosa* and *linguicauda*, p. x; RICHARDSON, Bull. U. S. Mus. liv.
- Dynamene perforata*, *benedicti*, *glabra*, and *moorei*, referred to *Dynamenella*, p. x, *D. carinata*, referred to *Dynameniscus*, p. xi; RICHARDSON, t. c.
- D. moorei*, W. Indies, p. 303, text-figg. 325 & 326; RICHARDSON, t. c. n. sp.
- Dynamenella* n. g. (*Sphæromidæ*) type *perforata* Moore, p. 107; HANSEN, Quart. J. Micr. Sci. xlix. [See also *Dynamene*.]
- Dymeniscus* n. g. (*Sphæromidæ*) *carinata*, p. xi; RICHARDSON, Bull. U. S. Mus. liv.
- Eurydice*, key to European spp., p. 357, *spinigera*, p. 359, *grimaldii*,

- p. 361, *truncata*, p. 363, pl. xxxiv, figg. 2a-2b, *pulchra*, p. 365, pl. xxxiv, figg. 3a-3c, pl. xxxiv, fig. 1a, *inermis*, p. 369, pl. xxxiv, figg. 3a-3c; HANSEN, J. Linn. Soc. xxix: *E. truncata*, p. 45, pl. xi, figg. 5-8; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- E. affinis*, coast of France, p. 367, pl. xxxv, figg. 2a-2k; HANSEN, J. Linn. Soc. xxix, n. sp.
- Eurydicidae* (= *Cirolanidae*), key to gen., p. 10; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- Exosphæroma faxoni*, Florida, p. 292, text-figg. 307 & 308; RICHARDSON, Bull. U. S. Mus. liv, n. sp.
- Faucheria* n. g. (*Cirolanidae*), p. 373, *faucheri*, p. 374, pl. xiv, figg. 2 & 2a, pl. xv, figg. 2, 7 & 8; DOLLFUS, Ann. Sci. nat. (8) xx.
- Gnathia insolita*, Gulf of Manaar, p. 9, pl. xii, B; STEBBING, Rep. Ceylon Pearl Fisheries iv, n. sp.
- Hanseniana sphaeromiformis*, p. 15, pl. ii, B; STEBBING, t. c.
- Hemisphaeroma* n. g. (*Sphaeromidae*), p. 103, *pulchrum*, Java, p. 117; HANSEN, Quart. J. Micr. Sci. xlix, n. sp.
- Irona nanoides*, Gulf of Manaar, p. 28, pl. vi, B; STEBBING, Rep. Ceylon Pearl Fisheries iv, n. sp.
- Lanocira zeylanica*, Gulf of Manaar, p. 19, pl. v, B; STEBBING, t. c. n. sp.
- Livoneca* sp.; WILLINK, Natuurk. Tijdschr. Nederl. Ind. lxiv, pp. 156-161.
- L. conveza*, Panama, p. 445, 2 figg.; RICHARDSON, P. U. S. Mus. xxix, n. sp.
- Nassa bidentata*, p. 47; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- Paracerceis* n. g. (*Sphaeromidae*), type *caudata* Say, p. 108; HANSEN, Quart. J. Micr. Sci. xlix. [See also *Cilicæa*.]
- Paradynamene* n. g. (*Sphaeromidae*) *benjaminsis*, Gulf-weed, p. 305, text-figg. 330-333; RICHARDSON, Bull. U. S. Mus. liv, n. sp.
- Rhiothra callipia*, p. 28, pl. vi, A; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- Rocinela belliceps*, p. 213, text-fig. 2, *angustata*, p. 214, text-fig. 3; RICHARDSON, Bull. Bureau Fisheries xxiv: *R. orientalis*, p. 24, pl. vi, C; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- R. propodialis*, Alaska, p. 214, text-fig. 4; RICHARDSON, Bull. Bureau Fisheries xxiv, n. sp.
- Spelaosphæroma* n. g. (*Cirolanidae*, sec. DOLLFUS), *julium*, Par-rieki, Italy; FERUGLIO, Il Mondo sotteraneo 1904, Nos. 1 & 2. [Quoted from DOLLFUS, Ann. Sci. Nat. (8) xx, p. 373.]
- Sphaeroma inermis*, W. of Ireland, p. 601; TATTERSALL, Rep. Brit. Ass. lxiv, 1904 (1905) [see *Cymodoce truncata*]: *S. walkeri*, Gulf of Manaar, p. 31, pl. vii; STEBBING, Rep. Ceylon Pearl Fisheries iv: n. spp.
- Sphaeromidae*, revision of sub-families, groups, and genera; HANSEN, Quart. J. Micr. Sci. xlix, pp. 69-135, pl. vii: discussion of genera, p. 29; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- Sphaeromides*, p. 371, *raymondi*, p. 372, pl. xiv, fig. 1, pl. xv, figg. 1 & 6; DOLLFUS, Ann. Sci. Nat. (8) xx.
- Tecticeps alascensis* and *convexus*, p. xi; RICHARDSON, Bull. U. S. Mus. liv.
- Tridentella* n. g. (*Corallanidae*) for *virginiana* Rehdn., p. 161; RICHARDSON, Bull. U. S. Mus. liv.
- Typhlocirolana* n. g. (*Cirolanidae*), p. 74, *moraguesi*, Majorca, p. 76; RACOVITZA, Bull. Soc. zool. France xxx, n. sp.
- Vireia* n. g. (*Sphaeromidae*), p. 377, *burgunda*, p. 378, pl. xiv, figg. 4 & 4a, pl. xv, figg. 4, 10 & 11, *berica*, p. 379, pl. xiv, figg. 5 & 5a, pl. xv, figg. 5, 12 & 13; DOLLFUS, Ann. Sci. Nat. (8) xx.

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Valvifera of N. America, descr. and figg. of all spp. (only n. gg. and spp. noted below); RICHARDSON, Bull. U. S. Mus. liv.

Amesopodidae n. fam., p. 44; STEBBING, Rep. Ceylon Pearl Fisheries iv.

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Arcturella dilatata, Firth of Forth, p. 151, pl. xiii, fig. 11; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.

Astacilla amblyura, Gulf of Manaar, p. 46, pl. xi, b; STEBBING, Rep. Ceylon Pearl Fisheries iv, n. sp.

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Idothea Fabr., 1799, distinct from *Idotea* Weber, 1795; RICHARDSON, P. Soc. Washington xviii, pp. 9 & 10.

Idothea spp. from Port Erin; HEWITT, P. Liverp. biol. Soc. xix, pp. 14 & 15: I. spp., p. 48; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).

I. fewkesi, California, p. 359, text-figg. 387 & 388; RICHARDSON, Bull. U. S. Mus. liv, n. sp.

Mesidotea n. g. (*Idotheidae*) for *entomon* (Linn.) etc., p. 347; RICHARDSON, t. c.

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Epicaridea of N. America, descr. and figg. of all spp. (only n. g. and sp. noted below); RICHARDSON, Bull. U. S. Mus. liv.

Epicaridea, notes on spp., p. 54; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).

Bopyricus n. g. (*Bopyridæ*) *calmani*, California, p. 562, text-figg. 617-619; RICHARDSON, Bull. U. S. Mus. liv, n. sp.

Bopyroides hippolytes, p. 218, text-figg. 6 & 7; RICHARDSON, Bull. Bureau Fisheries xxiv.

B. furcata (not descr.), p. 17; NORMAN, Mus. Nor. Crust., 2nd Ed., n. sp.

Colypuridæ n. fam. for *Colypurus* (q.v.), p. 105; RICHARDSON, Bull. Mus. Harvard xlv (6).

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Cryptoniscidæ, larva on *Nesa bidentata*, p. 47; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).

Gyge branchialis, distribution; GIARD, Feuille Natural. xxxvi, No. 421, p. 12: *G. galathee* Bate & Westwood = *G. branchialis* Cornalia & Panceri, note on host, p. 86; NORMAN, Ann. Nat. Hist. (7) xvi.

Heterophryxus appendiculatus, p. 77, pl. xi, figg. 1-4; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).

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Lobocepon n. g. (*Bopyridæ*), p. 504, *grapsi*, on *Grapsus grapsus*, New Guinea, p. 505, pl. xiii, fig. 6; NOBILI, Ann. Mus. Hungar. iii, n. sp.

Rhabdochiridæ n. fam. for *Rhabdocheirus incertus* Bonnier, p. 105; RICHARDSON, Bull. Mus. Harvard xlv (6).

Scyrrapepon n. g. (*Bopyridæ*), p. 35, *tuberculosa*, on *Scyramathia carpenteri*, W. of Ireland, p. 36, pl. xi, figg. 9-12; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905), n. sp.

ONISCOIDEA.

[See also CHILTON (70), LEBEDINSKIĖ (166).]

Oniscoideu, general account of structure and habits, descriptions and figures of British species; WEBB & SILLEM, Essex Natural. xiv, pp. 38-56 & 81-96.

Oniscoideu of N. America, descr. and figg. of all spp. (only n. spp. noted below); RICHARDSON, Bull. U. S. Mus. liv.

Distrib. of spp. introduced into Australia and New Zealand; CHILTON, Ann. Nat. Hist. (7) xvi, pp. 428-432.

Actoniscus lindahli, California, p. 635, text-figg. 679-680; RICHARDSON, Bull. U. S. Mus. liv, n. sp.

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Armadillo, revision of genus, many spp. re-descr. and figured, p. 96; BUDDE-LUND, Revis. Crust. Isop. Terr. 1904.

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Helleria brevicornis, synonymy and distrib.; NOBILI, Boll. Mus. Torino xx, No. 491.

Hiallum n. subg. of *Eubelum*, p. 22; BUDDE-LUND, Revis. Crust. Isop. Terr. 1899, see also Ent. Meddel. (2) i, p. 88.

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Lucasius orientalis, Cyprus, p. 174, text-fig. 5; DOLLFUS, Feuille Natural. xxxv, No. 418, n. sp.

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Porcellio hirtipes, Sahara, p. 325, text-figg. 1-4; DOLLFUS, Bull. Mus. Paris x, 1904 (6): *P. spatula*, p. 172, text-fig. 3, *carinatus*, p. 174, text-fig. 4, Cyprus; DOLLFUS, Feuille Natural. xxxv, No. 418: n. spp.

Pseudarmadillo dollfusi, Bahamas, p. 657, text-figg. 700 & 701; RICHARDSON, Bull. U. S. Mus. liv, n. sp.

Pseudophiloscia n. g. (*Oniscidae*) *fragilis*, New Zealand, p. 43, pl. vi, figg. 5 & 6, *inflexa*, Chile, p. 43, pl. vi, figg. 1-4; BUDDE-LUND, Revis. Crust. Isop. Terr. 1904, n. spp.

- Saidjahus* n. g. (*Oniscidae*), p. 49, *creper*, Borneo, p. 49, pl. vi, figg. 24-29 ;
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- Scleropactes concinnus*, p. 47, pl. vii, figg. 1-10 ; BUDDE-LUND, t. c.
- Spherillo*, revision of genus, many spp. re-descr. and figured, p. 51 ; BUDDE-LUND, t. c.
- S. sollers*, Australia, p. 55, pl. vii, figg. 16 & 17, *collaris*, Mauritius, p. 60, *squamatus*, New Zealand, p. 61, *bipunctatus*, New Zealand, p. 62, *rufomarginatus*, New Zealand, p. 64, pl. vii, figg. 34-36, *marginatus*, New Zealand, p. 65, *tarangensis*, New Zealand, p. 67, pl. viii, fig. 9, *dispersus*, Bismarck Ids., p. 70, pl. viii, fig. 10, *impressifrons*, Sydney, p. 73, *iniquus*, Cape York, p. 74, pl. viii, figg. 13 & 14, *canaliculatus*, Chatham Ids., p. 74, *chathamensis* (= *A. speciosus* Chilton, non Dana), Chatham Ids., p. 75, *peltatus*, Seychelles, p. 78, *maculosus*, Seychelles, p. 80, *decoratus*, Siam, p. 81, *boholensis*, Philippines, p. 82, *brachycephalus*, Borneo, p. 84, *obliquipes*, Philippines, p. 85, *lentus*, New Guinea, p. 88, pl. viii, figg. 37-39, *setuceus*, Auckland, p. 89, *nobilis*, Riu-Kiu Ids., p. 90, pl. ix, figg. 1 & 2, *ingens*, Philippines, p. 91, pl. ix, figg. 4-7, *caligans*, Philippines, p. 92, *brevis*, Auckland, p. 93 ; BUDDE-LUND, t. c. n. spp.
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- Titanethes albus*, p. 56, fig. 10 ; LEBEDINSKIĬ, Zapiski Novoross. Obshch. xiii (2).
- Trichoniscus roseus*, Ireland ; WELCH, Irish Natural. xiv, p. 198.

7. AMPHIPODA.

[See also BRADY (36), BUCHINSKAIO (47), CHILTON (70), CHUN (71), PAULMIER (220), SCOTT (266 & 269), SMITH (285), WOLTERSTORFF (340).]

Amphipoda, revision of nomenclature of spp. described in Bate & Westwood's "British Sessile-eyed Crustacea"; NORMAN, Ann. Nat. Hist. (7) xvi, pp. 78-95.

GAMMARINA.

[See also HUBER (141), LEBEDINSKIĬ (165 & 166), OSTWALD (216).]

Gammarina of North Sea, notes on many spp., only those figured are noted below ; REIBISCH, Wiss. Meeresuntersuch. Kiel viii, pp. 147-188.

"Secondary appendage" of antennules as systematic character ; WALKER, Ann. Nat. Hist. (7) xvi, p. 464.

List of spp. from N. Atlantic, p. 7 ; CHEVREUX, Bull. Mus. Monaco xxv.

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- Apherusa gracilis*, New England, p. 495, text-fig.; HOLMES, t. c. n. sp.
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- Bathynonyx* n. g. (*Gammarida*) *de Vimesi*, Lough Mask, p. 2, pls. i & ii, figg. 1-19; VEJDovsky, SB. Bohmisch. Ges. 1905, xxviii, n. sp.
- Bathyporeia norvegica*, p. 157, pl. iv, figg. 2-6, *pelagica*, p. 158, pl. iv, figg. 7 & 8, *gracilis*, p. 158, pl. iv, figg. 9-12, *pilosa*, p. 160, pl. iv, fig. 13; REIBISCH, Wiss. Meeresuntersuch. Kiel viii.
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- Byblis serrata*, p. 482, pl. v, fig. 3 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Calliopius leviusculus*, p. 494, pl. x, fig. 1 & text-fig.; HOLMES, t. c.
- Carinogammarus mucronatus*, p. 503, text-fig.; HOLMES, t. c.
- Cerapus tabularis*, p. 517, text-fig.; HOLMES, t. c.
- Charcotia* n. g. (*Lysianassida*) *obesa*, Antarctic Seas, p. 163, text-fig. 3; CHEVREUX, Bull. Soc. zool. France xxx, n. sp.
- Cheirimedon dentimanus*, Antarctic Seas, p. 159, text-fig. 1; CHEVREUX, t. c. n. sp.
- Chelura terebrans*, p. 508, text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Coremapus* n. g. (near *Microdeutopus*), type *verruculatus* Bate, p. 78; NORMAN, Ann. Nat. Hist. (7) xvi.
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- Cyphocaris richardi*, Azores, p. 1, figg. 1 & 2; CHEVREUX, Bull. Mus. Monaco xxiv: *C. alicei*, Atlantic, p. 1, figg. 1 & 2; CHEVREUX, Bull. Mus. Monaco xxvii: n. spp.
- Dexamine thea*, p. 498, text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
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- Eptimeria loricata*, p. 491, pl. viii, fig. 3; HOLMES, Bull. Bureau Fisheries xxiv.
- Erichthonius rubricornis*, p. 518, text-fig., *minax*, p. 519, text-fig.; HOLMES, t. c.
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- Gammaropsis gardineri*, Maldive Ids., p. 929, pl. lxxxviii, figg. 11-14, 16, 17; WALKER, Fauna Maldive ii, n. sp.
- Gammarus locusta*, p. 500, pl. x, fig. 3 & text-fig., *annulatus*, p. 501, pl. xi, fig. 2 & text-fig., *marinus*, p. 502, pl. xi, fig. 1 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv: *G. annulatus*, phototropism; SMITH, Amer. J. Physiol. xiii, pp. 205-216, 4 text-figg.
- Grubia compta*, p. 510, text-fig.; HOLMES, Bull. Bureau Fisheries xxiv: *G. microphthalmus*, p. 930, pl. lxxxviii, fig. 15, text-fig. 142; WALKER, Fauna Maldive ii.
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- Halirages fulvocinctus*, p. 495, text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
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- Hauistorius arenarius*, p. 476, pl. v, fig. 2 & text-fig.; HOLMES, t. c.
- Hippomedon kergueleni*, p. 3; THOMSON, P. Soc. Tasmania 1900/1901.

- H. serratus*, New England, p. 473, pl. iv, fig. 2 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv, n. sp.
- Hoplonyx cicada*, p. 474, pl. iv, fig. 1 & text-fig.; HOLMES, t. c.
- Hyale nilssoni*, p. 925, text-fig. 140; WALKER, Fauna Maldive ii.
- Ichthyocerus anquipes*, p. 513, pl. xiii, fig. 3 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Jassa marmorata*, New England, p. 511, text-fig.; HOLMES, t. c. n. sp. [See also *Bruzeliella*.]
- Katius* n. g. (*Lysianassidae*) *oberus*, N. Atlantic, p. 1, figg. 1-3; CHEVREUX, Bull. Mus. Monaco xxxv, n. sp.
- Krøyeria arenaria*, p. 182, pl. v, figg. 6-10, *altamarina*, p. 183, pl. v, figg. 11-15; REIBISCH, Wiss. Meeresuntersuch. Kiel viii.
- Lafystius sturionis*, p. 492, pl. ix, fig. 2 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Leucothoë spinicarpa*, p. 486, pl. vii, fig. 1 & text-fig.; HOLMES, t. c.: *L. liljeborgii*, p. 179, pl. v, fig. 5; REIBISCH, Wiss. Meeresuntersuch. Kiel viii.
- Lysianopsis* n. g. (*Lysianassidae*) *alba*, New England, p. 475, pl. v, fig. 1 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv, n. sp.
- Mæra danae*, p. 525, pl. xii, fig. 2; HOLMES, t. c.
- Melita dentata*, p. 504, text-fig., *nitida*, p. 505, pl. xi, fig. 3 & text-fig.; HOLMES, t. c.
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- Menigrates obtusifrons*, p. 154, pl. iv, fig. 1; REIBISCH, Wiss. Meeresuntersuch. Kiel xiii.
- Metopa grænländica*, p. 483, pl. vi, fig. 3 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- M. quadrangula*, North Sea, p. 178, pl. v, figg. 1-4; REIBISCH, Wiss. Meeresuntersuch. Kiel viii, n. sp.
- Microdeutopus gryllotalpa*, p. 514, text-fig., *danmonensis*, p. 515, text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Monoculodes edwardsi*, New England, p. 487, text-fig.; HOLMES, t. c. n. sp.
- Niphargus caspary* Pratz = *N. kochianus* de Rougemont, non Bate, p. 18, text-figg. i-xiv; VEJDovsky, SB. Bohmisch Ges. 1905, xxviii.
- Orchestia agilis*, p. 469, pl. ii, fig. 3 & text-fig., *palustris*, p. 471, pl. iii, fig. 1 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv: *O. palustris*, structure and habits; SMALLWOOD, Cold Spring Mon. iii: *O. platenais*, p. 924, text-fig. 140; WALKER, Fauna Maldive ii.
- Orchomenella macronyx*, Antarctic Seas, p. 161, text-fig. 2; CHEVREUX, Bull. Soc. zool. France xxx, n. sp.
- Paracyphocaris* n. g. (*Lysianassidae*) *predator*, N. Atlantic, p. 1, figg. 1-3; CHEVREUX, Bull. Mus. Monaco xxxii, n. sp.
- Paragrubia vorax*, p. 930, pl. lxxxviii, fig. 18; WALKER, Fauna Maldive ii.
- Paramphithoë pulchella*, p. 489, pl. viii, fig. 1 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Paraphoxus spinosus*, New England, p. 477, text-fig.; HOLMES, t. c. n. sp.
- Parapleustes latipes*, p. 187, pl. v, fig. 19; REIBISCH, Wiss. Meeresuntersuch. Kiel viii.
- Paratylus minikoi*, Minikoi, p. 925, text-fig. 141; WALKER, Fauna Maldive ii, n. sp.
- Paradiceros lynceus*, p. 487, pl. vii, fig. 2 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Phorocephalus hölbölli*, p. 477, text-fig.; HOLMES, t. c.
- Pleustes panoplus*, p. 488, pl. vii, fig. 3 & text-fig.; HOLMES, t. c.
- Podoceroopsis nitida*, p. 524, text-fig.; HOLMES, t. c.
- Podocerus* [see *Bruzeliella*].
- Polycheria atollii*, Maldive Ids., p. 926, pl. lxxxviii, figg. 1-5; WALKER, Fauna Maldive ii, n. sp.

- Pontogenia inermis*, p. 496, text-fig.; HOLMES, Bull. Bureau Fisheries xiv.
- Pontoporeia femorata*, p. 476, text-fig.; HOLMES, t. c.
- Ptilocheirus pinguis*, p. 522, pl. xii, fig. 3 & text-fig.; HOLMES, t. c.
- Rhachotropis aculeata*, p. 493; HOLMES, t. c.
- Stegocephalus inflatus*, p. 482, pl. vi, fig. 2; HOLMES, t. c.
- Stenothoe cypria*, p. 484, text-fig., *minuta*, p. 485, text-fig., New England; HOLMES, t. c. n. spp.
- Sympleustes latipes*, p. 490, pl. viii, fig. 2, text-fig., *glaber*, p. 490, text-fig.; HOLMES, t. c.
- Talorchestia longicornis*, p. 468, pl. ii, fig. 1 & text-fig., *megalophthalma*, p. 469, pl. ii, fig. 2 & text-fig.; HOLMES, t. c.
- Tryphosa pinguis*, p. 473, pl. iv, fig. 3 & text-fig.; HOLMES, t. c.
- Uncia irrorata*, p. 520, text-fig.; HOLMES, t. c.
- Urothoe elegans*, p. 161, *marina*, p. 163, pl. iv, figg. 14-16; REIBISCH, Wiss. Meeresuntersuch. Kiel viii.
- U. poseidonis*, North Sea, p. 163, pl. iv, figg. 17-21; REIBISCH, t. c. n. sp.
- Westwoodilla hyalina*, p. 184, pl. v, figg. 16-18; REIBISCH, t. c.

HYPERINA.

- Acanthoscina macrocarpa*, N. Atlantic, p. 2, fig.; CHEVREUX, Bull. Mus. Monaco xxviii, n. sp.
- Brachyscelus mediterraneus* and *crusculum*, notes; SENNA, Annuar. Mus. Univ. Napoli i (6), 9 pp., 10 text-figg.
- Euthemisto bispinosa*, p. 465, pl. i, fig. 2; HOLMES, Bull. Bureau Fisheries xxiv.
- Hyperia galba*, p. 404, pl. i, fig. 1 & text-fig.; HOLMES, t. c.
- Lanceolida*, larval form (*Physosoma*), p. 417, text-fig. 3; WOLTERECK, Zool. Anz. xxix.
- Parascina fowleri*, male, p. 1; CHEVREUX, Bull. Mus. Monaco xxvii.
- Phronima sedentaria*, p. 465, pl. i, fig. 3; HOLMES, Bull. Bureau Fisheries xxiv.
- Scinidae*, list of spp. from N. Atlantic, p. 1; CHEVREUX, Bull. Mus. Monaco xxvii.
- Scypholanceola* n. g. (*Lanceolidae*), no species named, p. 415, text-fig. 2; WOLTERECK, Zool. Anz. xxix.
- Vibilioides* n. g. (*Vibiliidae*) *alberti*, N. Atlantic, p. 1, figg. 1 & 2; CHEVREUX, Bull. Mus. Monaco xlix, n. sp.

CAPRELLINA.

[See also BRAUN (37), VAN BREEMEN (38).]

- Aeginella longicornis*, p. 525, text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Caprella geometrica*, p. 526, text-fig., *linearis*, p. 526, text-fig., *septentrionalis*, p. 527, *stimpsoni*, p. 527; HOLMES, t. c.
- Podalirius* sp. in Lake of Geneva; BLANC, Arch. Sci. Nat. xix (2), p. 208, and C.R. vi. Congr. Internat. Zool. Berne, pp. 425-429, 4 text-figg.

8. PHYLLOCARIDA.

[See also THIELE in ZIMMER (349).]

- Nebalia typhlops*, off W. of Ireland; TATTERSALL, Ann. Rep. Fish. Ireland 1902-1903, Pt. ii, App. vii (1905), p. 210: *N. longicornis magellanica*,

- p. 66, pl. ii, figg. 14-17; THIELE, *Deutsch. Südpol. Exp.* 1901-1903, ix.
Nebaliella extrema, Antarctic Sea, p. 61, pl. ii, figg. 1-13; THIELE, t. c. n. sp.

B. ENTOMOSTRACA.

[See PAULSEN (221).]

1. BRANCHIOPODA.

a. PHYLLOPODA.

[See also BUCHINSKAIO (47), DEYROLLE (94), †NEWTON (188), SCOURFIELD (274), SNETHLAGE (289), †WALTHER (319), †WOODWARD (342).]

Phyllopoda, structure of eyes and frontal organ; NOWIKOFF, *Zeitschr. wiss. Zool.* lxxix, pp. 432-464, pls. xxii & xxiii, 9 text-figg.

Phyllopoda, notes on British spp.; SCOURFIELD, *J. Quekett Club* (2) ix, pp. 39 & 40.

Apus sp., in Balúchistán; VREDENBURG, *Jour. and Proc. Asiatic Soc. Bengal* (n. s.) i (3), pp. 33 & 34, 1 text-fig.

A. sakalavus, Madagascar, p. 1; NOBILI, *Boll. Mus. Torino* xx, No. 513, n. sp.

Artemia salina, habits, breeding etc.; ARTOM, *Zool. Anz.* xxix, pp. 284-291, 1 text-fig.: cervical plate of nauplius; ZOGRAF, *C.R. Ac. Sci.* cxli, pp. 903-905.

Branchinecta coloradensis, *lindahli* and *paludosa*, compared, notes on development; SHANTZ, *Biol. Bull.* ix, pp. 249-264, pls. x-xii.

Chirocephalus diaphanus, phagocytosis and excretion; BRUNTZ, *Arch. Zool. exp.* (4) iv, pp. 183-198, pl. xiv, and *C.R. Soc. Biol.* lix, 1905 (26), pp. 229 & 230.

Estheria hislopi, p. 231, pl. xv, figg. 1-10; DADAY, *Zoologica* xviii (44).

E. obliqua, Cape Colony, p. 10, pl. ii; SARS, *Arch. Naturv. Christian.* xxvii (4), n. sp.

Limnadia lenticularis, anatomy and histology; NOWIKOFF, *Zeitschr. wiss. Zool.* lxxviii, pp. 561-619, pls. xix-xxii, 5 text-figg.: *L. lenticularis*, p. 63, pl. iv, figg. a-f; VÁVRA, *J. Quekett Club* (2) ix (1904).

Limnetis brachyura, p. 66; VÁVRA, t. c.

†*Ribeiria parva*, Ordovician, Pennsylvania, p. 419, pl. lix, figg. 4 & 5; COLLIE, *Bull. Geol. Soc. Amer.* xiv, n. sp.

Streptocephalus dregei, p. 298, pl. xviii, figg. 1 & 2; GURNEY, *P. Zool. Soc. London* 1904, ii (2) (1905).

S. papillatus, Cape Colony, p. 4, pl. i; SARS, *Arch. Naturv. Christian.* xxvii (4), n. sp.

b. CLADOCERA.

[See also VAN BREEMEN (38), BREHM (39), BREHM & ZEDERBAUER (41), GURNEY (121), HUBER (141), JUDAY (154), MACCALLUM (173), MURRAY (187), RUTTNER (255), SARS (261), A. SCOTT (263 & 264), T. SCOTT (266, 269, 272), SCOURFIELD (273), SKORIKOW (283), VOIGT (315), WELTNER (324), WOLTERSTORFF (340), ZACHARIAS (344 & 345), ZYKOFF (352, 353, 355).]

Cladocera, review of distribution; STINGELIN, *C.R. vi. Congr. Internat. Zool. Berne*, pp. 533-541.

Cladocera, "olfactory" filaments; SCOURFIELD, *Forschber. Plon* xii, pp. 340-353, pls. v & vi.

Cladocera, figg. and notes on spp., some new varr. described, in Servian ;
 ČORČEVIĆ, Ghlas Srpeka Ak. lxix, pp. 190-249.

Cladocera, notes (in Russian) and figg. of some freshwater spp. ; MEISSNER,
 Trudui Kazan Univ. xxxix (3).

Acroperus harpæ, p. 154, text-figg. 9-12 ; KEILHACK, Arch. Naturg.
 lxxi (i).

Alona affinis, p. 171, pl. x, figg. 26 & 27, *cambouei*, p. 172, pl. xi, figg. 1 & 2,
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 DADAY, Zoologica xviii (44) : *A. guttata*, p. 143, text-fig. 2, sp., p. 159,
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A. anodonta, p. 175, pl. xi, figg. 5 & 6, *fasciculata*, p. 177, pl. xi, figg. 9-11,
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Alonella dentifera, p. 162, pl. x, figg. 10 & 11, *punctata*, p. 163, pl. x,
 figg. 12-17, *globulosa*, p. 165, pl. x, figg. 8 & 9 ; DADAY, Zoologica
 xviii (44) : *A. (Pleuroxus) nana*, p. 259, text-fig. 45 ; TIMM, Mt. Mus.
 Hamburg xxii.

Alonopsis ambigua, p. 150, text-fig. ; GURNEY, Tr. Norfolk Soc. viii.

Anchistropus emarginatus, p. 264, text-fig. 56 ; TIMM, Mt. Mus. Hamburg
 xxii.

Boemina longirostris, p. 49, text-fig. 1 ; BREHM & ZEDERBAUER, Verh. Ges.
 Wien lv : *B. crassicornis*, p. 154, text-fig. 8 ; KEILHACK, Arch. Naturg.
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 text-figg. 1 & 2 ; ZYKOFF, Zool. Anz. xxix.

B. tenuirostris, p. 196, pl. xii, figg. 18-20, *macrostyla*, p. 197, pl. xii
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Boeminiella anisitsi, p. 199, pl. xiii, figg. 1-5 : DADAY, t. c.
Campiocercus australis, p. 189, pl. xii, fig. 4 ; DADAY, t. c.

Ceriodaphnia cornuta, p. 205, pl. xiii, figg. 16 & 17, *rigaudi*, p. 206, pl. xiii,
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C. piger, p. 145, text-fig. 3, *gibbus*, p. 160, text-fig. 18 ; KEILHACK,
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 Arch. Naturg. lxxi (i) : *D. zschokkei* var. *vigesina* n. var., p. 67,
 2 text-figg. ; MONTI, Forschber. Plon xii : *D. obtusa*, parasite of ;
 PÉREZ, C.R. Soc. Biol. lviii, 1905 (22), pp. 1027-1029, 2 text-figg. :
D. magna, distribution ; STINGELIN, Zool. Anz. xxix, p. 224 : *D.*, notes
 on spp., p. 236 ; TIMM, Mt. Mus. Hamburg xxii : *D. pulex*, formation
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D. hyalina, form *notodon-varani* form. nov., p. 733 ; ZACHARIAS,
 Zool. Anz. xxviii : *D. hyalina*, structure and formation of ephippium ;
 ZWACK, Zeitschr. wiss. Zool. lxxix, pp. 548-573, pls. xxvi & xxvii.

Diaphanosoma leuchtenbergianum, p. 235, text-figg. 1 & 2 ; TIMM, Mt. Mus.
 Hamburg xxii.

Euryalona tenuicaudis, p. 178, pl. xi, figg. 12 & 13, *orientalis*, p. 180, pl. xi,
 figg. 14 & 15 ; DADAY, Zoologica xviii (44).

E. fasciculata, Paraguay, p. 181, pl. xii, figg. 5-10 ; DADAY, t. c. n. sp.

- Eurycerus lamellatus*, p. 254, text-figg. 35 & 36; TIMM, Mt. Mus. Hamburg xxii.
- Grimaldina brassai*, p. 192; DADAY, Zoologica xviii (44).
- Hyalodaphnia cucullata*, p. 238, text-figg. 3-5; TIMM, Mt. Mus. Hamburg xxii.
- Hiocryptus halyi*, p. 190; DADAY, Zoologica xviii (44): *I. sordidus*, p. 252, text-figg. 31 & 32, *agilis*, p. 253, text-fig. 33; TIMM, Mt. Mus. Hamburg xxii.
- I. verrucosus*, Paraguay, p. 191, pl. xii, figg. 11-14; DADAY, Zoologica xviii (44), n. sp.
- Latona setifera*, p. 139, text-fig. 1; KEILHACK, Arch. Naturg. lxxi (i).
- Latonopsis brevisemis*, pl. xiv, figg. 1-3, *fasciculata*, pl. xiv, figg. 13-17, Paraguay; DADAY, Zoologica xviii (44), n. spp.
- Leptorhynchus rostratus*, p. 168, pl. x, figg. 24 & 25; DADAY, t. c.
- L. dentifer*, Paraguay, p. 169, pl. x, figg. 18-23; DADAY, t. c. n. sp.
- Leydigia acanthocercoides*, p. 185, pl. xi, fig. 19; DADAY, t. c.: *L. quadrangularis*, p. 258, text-fig. 44; TIMM, Mt. Mus. Hamburg xxii.
- L. parva*, Paraguay, p. 186, pl. xi, figg. 20 & 21; DADAY, Zoologica xviii (44): *L. africana*, Orange River Colony, p. 300, pl. xviii, figg. 5 & 6; GURNEY, P. Zool. Soc. London 1904, ii (2) (1905): n. spp.
- Leydigioopsis ornata*, Paraguay, p. 187, pl. xii, figg. 1-3; DADAY, Zoologica xviii (44), n. sp.
- Lyneus (Alona) quadrangularis*, p. 255, text-figg. 37 & 38, *affinis*, p. 256, text-figg. 39 & 40, *rectangulus*, p. 257, text-figg. 41 & 42, *Alonella* *rostratus*, p. 257, text-fig. 43; TIMM, Mt. Mus. Hamburg xxii.
- Macrothrix laticornis*, p. 253, text-fig. 34; TIMM, t. c.
- M. gibbera*, Paraguay, p. 195, pl. xii, figg. 15-17; DADAY, Zoologica xviii (44), n. sp.
- Moina micrura*, p. 241, text-figg. 9 & 10; TIMM, Mt. Mus. Hamburg xxii.
- M. ciliata*, Paraguay, p. 201, pl. xiii, figg. 9-13; DADAY, Zoologica xviii (44): *M. belli*, Orange River Colony, p. 299, pl. xviii, figg. 3 & 4; GURNEY, P. Zool. Soc. London 1904, ii (2) (1905): n. spp.
- Moinodaphnia reticulata*, Paraguay, p. 202, pl. xiii, figg. 6-8; DADAY, Zoologica xviii (44), n. sp.
- Monospilus dispar*, p. 263, text-fig. 55; TIMM, Mt. Mus. Hamburg xxii.
- Parasida ramosa*, p. 218, pl. xiv, figg. 4-7, *variabilis*, p. 220, pl. xiv, figg. 8-12; DADAY, Zoologica xviii (44).
- Pleuroxus trigonellus*, p. 259, text-figg. 46-48, *uncinatus*, p. 261, text-fig. 49; TIMM, Mt. Mus. Hamburg xxii.
- Pseudalona latissima*, p. 183, pl. xi, fig. 16, *longirostris*, p. 184, pl. xi, fig. 18; DADAY, Zoologica xviii (44).
- Simocephalus*, priority, p. 141; KEILHACK, Arch. Naturg. lxxi (i): *S. capensis*, p. 209, pl. xiii, figg. 23 & 24; DADAY, Zoologica xviii (44): *S. vetulus*, p. 240, text-figg. 6 & 7; TIMM, Mt. Mus. Hamburg xxii: *S. vetulus*, determination of sex; ISSAKOWITSCH, Biol. Zentrbl. xxy, pp. 529-536.

2. COPEPODA.

[See also BRAUN (37), VAN BREEMEN (38), BREHM (39), BREHM & ZEDERBAUER (40 & 41), BUCKINSKAI (47), CHUN (71), DAMAS (93), HUBER (141), JENSEN (148), JOHNSTONE (150), JUDAY (154), LEBEDYNSKII (165), LOHMANN (171), MONTI (185), MURRAY (187), PEARSON (224), RUTTNER (255), SARS (261), A. SCOTT (263 & 264), T. SCOTT (266, 269, 271), SKORIKOW (283), VOIGT (315), WILSON (331), WOLTERSTORFF (340), ZACHARIAS (344 & 345), ZYKOFF (352, 353, 356).]

- Copepoda*, figg. and notes on freshwater spp., in Servian; ČORČEVIĆ, Ghlas Srpska Ak. lxi, pp. 190-249.
- Copepoda*, notes (in Russian) and figg. of some freshwater spp.; MEISSNER, Trudui Kazan Univ. xxxix (3).
- Acartia clausi*, p. 49, pl. ii, figg. 9 & 10, *giesbrechti*, p. 50, pl. ii, figg. 5-8; T. SCOTT, Tr. Soc. Glasgow vii (1).
- A. simplex*, Chatham Ida., p. 375, pl. xiv, figg. 13-20; Sars, Zool. Jahrb. Syst. xxi, n. sp.
- Acrocalanus longicornis*, p. 1000, figg. on pl. xcvii, *monachus*, p. 1002, figg. on pl. xcvii, *gibber*, p. 1003, figg. on pl. xcvii, *gracilis*, p. 1003, figg. on pl. xcvii; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- A. gardineri*, Maldive Ida., p. 1005, figg. on pl. xcvii; WOLFENDEN, t. c. n. sp.
- Agisthus spinulosus*, W. of Ireland, p. 46, pl. xii, figg. 8-14, pl. xiii, figg. 1-4; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii, n. sp.
- Alecion gracile*, p. 128, *glabrum*, p. 129, Massachusetts; WILSON, P. Soc. Washington xviii, n. spp.
- Amalophora affinis*, p. 21, *obtusifrons*, p. 22, N. Atlantic; Sars, Bull. Mus. Monaco xxvi, n. spp.
- Ameira brevivremis*, off Northumberland, p. 214, pl. iii, figg. 11-14, pl. iv, figg. 1-6; BRADY, Tr. Soc. Northumb. (n. s.) i: *A. simplex*, Devonshire, p. 291; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv: *A. elegans*, Firth of Forth, p. 144, pl. x, figg. 18 & 19, pl. xi, figg. 1-9; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii: n. spp.
- Amphiascus n. g.* (*Diosaccidae*) = *Stenholia* Brady, non Boeck, p. 380, *pacificus*, Chatham Ida., p. 381, pl. xv, figg. 36-52; Sars, Zool. Jahrb. Syst. xxi, n. sp.
- Anchorella uncinata*, p. 8, pl. iv, fig. 8; BRIAN, Annuar. Mus. Univ. Napoli i (24).
- Anthosoma crassum*, p. 112, pl. v, figg. 15 & 16; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Anuretes heckellii*, p. 647, pl. xxv, figg. 316-321; WILSON, P. U. S. Mus. xxviii.
- Arietellus giesbrechti*, p. 21, *plumifer*, p. 21, *pavoninus*, p. 22, *simplex*, p. 22, N. Atlantic; Sars, Bull. Mus. Monaco xl, n. spp.
- Aspidiscus fasciatus*, p. 81, pl. xlviii; Sars, Crust. Norway v.
- Augaptilus angustus*, p. 10, *laticeps*, p. 11, *oblongus*, p. 11, *brevicaudatus*, p. 12, *gracilis*, p. 12, *elongatus*, p. 13, *nodifrons*, p. 13, *truncatus*, p. 14, *longicirrus*, p. 15, *tenuicaudis*, p. 15, *gibbus*, p. 16, *longimanus*, p. 17, *cucullatus*, p. 17, N. Atlantic; Sars, Bull. Mus. Monaco xl, n. spp.
- Bathycalanus n. g.* (*Calanidae*), p. 7, *richardi*, N. Atlantic, p. 8; Sars, op. cit. xxvi, n. sp.
- Bathypontia n. g.* (*Parapontellidae*), p. 23, *elongata*, N. Atlantic, p. 24; Sars, op. cit. xl, n. sp.
- Beatricella n. g.* for *Delavalia mimica* Scott, p. 568; SCOTT, Ann. Nat. Hist. (7) xvi.
- Belisarius viguieri*, p. 44, pl. ii, figg. 1-5; SCOURFIELD, J. Quekett Club (2) ix (1904).
- Beckella*, def., notes, and list of spp. p. 593; ERMAN, Zool. Anz. xxix.
- Brachiella thynni*, anatomy; MICULICICH, Zool. Anz. xxviii, pp. 599-620, 7 text-figg.: *B. spp.*, notes; MICULICICH, t. c. pp. 733-736.
- Brachycalanus n. g.* (*Calanidae*) *atlanticus*, p. 41, pl. x, figg. 1-14; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii.
- Bradyetes n. g.* (*Calanidae*), p. 31, *inermis*, W. of Ireland, p. 32, pl. iii, figg. 13-20, pl. iv, figg. 13-14; FARRAN, t. c. n. sp.
- Bradydium armatus*, p. 1005; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- Bryazis brevicornis*, p. 32, pl. iv, fig. 6; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii.

- B. minor*, W. of Ireland, p. 32, pl. iv, figg. 1-5 & 7-12; FARRAN, t. c. n. sp.
- Calanipeda aquaedulcis* Kritschagin = *Pop[p]ella guerni* Richard, p. 281; ZYKOFF, Zool. Anz. xxix.
- Calanus vulgaris* var. *plumosus* n. var., p. 994, pl. xcvi, figg. 21 & 22, *caroli*, p. 994, pl. xcvi, fig. 42, *pauper*, p. 995, pl. xcvi, figg. 29, 31, 32 & 35, *minor*, p. 995, pl. xcvi, figg. 36-38, *robustior*, p. 996, pl. xcvi, figg. 5 & 6; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- Caligodes megacephalus*, N. America, p. 609, pl. xvi; WILSON, P. U. S. Mus. xxviii, n. sp.
- Caligus trachypteri*, p. 3, pl. iii, figg. 1-7; BRIAN, Annuar. Mus. Univ. Napoli i (24): *C. abbreviatus*, p. 109, pl. v, figg. 1-6; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii: *C. rapax*, p. 568, pl. vii and many text-figg., *curtus*, p. 578, pl. x and text-figg., *belones*, p. 586, pl. xii, figg. 135-139, *pelamydis*, p. 594, pl. xiii, figg. 154-161, pl. xiv, fig. 161a, *productus*, p. 597, pl. xiv, figg. 162-170, *balistæ*, p. 601, pl. xv, figg. 172-177, *isonyx*, p. 602, pl. xiv, fig. 171, pl. xv, figg. 184-186, *thymni* [? *thynni*], p. 603, pl. xv, figg. 178 & 179, *hamulonis*, p. 606, pl. xv, figg. 180-183, *monacanthi*, p. 607, *centrodonti*, p. 652, pl. xxvii; WILSON, P. U. Mus. xxviii.
- C. remore*, Red Sea, p. 564, 9 figg.; BRIAN, Arch. parasit. ix: *C. rugimaculatus*, p. 561, pl. v, *schistonyx*, p. 564, pl. vi, *mutabilis*, p. 573, pl. viii, text-fig. 2, *aliuncus*, p. 576, pl. ix, *chelifer*, p. 582, pl. xi, *latifrons*, p. 587, pl. xii, figg. 140-149, *bonito*, p. 589, pl. xiii, figg. 150-153 and many text-figg., North America, *teres*, p. 649, pl. xxvi, Chile; WILSON, P. U. S. Mus. xxviii: n. spp.
- Candacia catula* var. *similis* n. var., p. 1012; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- C. obtusa*, N. Atlantic, p. 23; SARRS, Bull. Mus. Monaco xl: *C. tuberculata*, Maldive Ids., p. 1013, figg. on pl. xcvi; WOLFENDEN, Fauna Maldive ii, Suppl. i: n. spp.
- Canthocamptus bidens*, p. 144, pl. ix, figg. 5-8, *trispinosus*, p. 145, pl. ix, fig. 9; DADAY, Zoologica xviii (44): *C.*, notes on spp., breeding habits etc.; WOLF, Zool. Jahrb. Syst. xxii, pp. 101-280.
- Centropages gracilis*, p. 1013, figg. on pl. xcvi, *calaninus*, p. 1014, figg. on pl. xcvi, *elongatus*, p. 1014, figg. on pl. xcvi, *orsinii*, p. 1015, figg. on pl. xcvi, *furcatus*, p. 1016; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- Chirundina angulata*, N. Atlantic, p. 13; SARRS, Bull. Mus. Monaco xvi, n. sp.
- Chondracanthus depressus* and var. *oblongus* n. var. on *Pleuronectes fesus*, E. Scotland, p. 114, pl. vi, figg. 7-17; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii, n. sp.
- Cletodes sarsi*, Firth of Forth, p. 146, pl. xii, figg. 1-9; T. SCOTT, t. c. n. sp.
- Cornucalanus* n. g. (near *Xanthocalanus*), p. 20, *magnus* (locality ?), p. 21, pl. vii, *simplex* (locality ?), p. 22; WOLFENDEN, Plankton Studies i, n. spp.
- Corycaeus*, notes on spp., p. 1026, figg. on pl. xcix; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- Cyclopidae*, figg. of various spp. with notes in Russian; LEBEDINSKII, Zapiski Novoross. Obshch. xxv (2).
- Cyclopina pusilla*, Chatham Ids., p. 399, pl. xix, figg. 150-161; SARRS, Zool. Jahrb. Syst. xxi, n. sp.
- Cyclops phaleratus*, p. 132, pl. viii, fig. 1, *anceps*, p. 133, pl. viii, figg. 2-4, *prasinus*, p. 134, pl. viii, fig. 5, *varicans* var. *furcatus* n. var., p. 135, pl. viii, figg. 6-11, *macrurus*, p. 137, pl. viii, figg. 12, 21, 28, 29, *mendocinus*, p. 138, pl. viii, fig. 17, *albidus*, p. 139, pl. viii, figg. 13 & 14, *annulatus*, p. 139, pl. viii, figg. 15 & 16, *dybowskii*, p. 140, pl. viii, figg.

- 18-20, *spinifer*, p. 141, pl. viii, figg. 22-27, pl. ix, figg. 1 & 2, *strenuus*, p. 142, pl. ix, figg. 3 & 4; DADAY, Zoologica xviii (44): *C. nanus*, p. 44, pl. ii, figg. 6-9; SCOURFIELD, J. Quekett Club (2) ix. (1904): *C.*, notes on spp., breeding habits etc.; WOLF, Zool. Jahrb. Syst. xxii, pp. 101-280.
- Cylindropsyllus brevicornis*, Ryckflusse, p. 437, figg. 8-10; DOUWE, Zool. Anz. xxviii, **n. sp.**
- Dactylopodella* **n. g.** (*Thalestridae*), p. 131, *flava*, p. 132, pl. lxxxi; SARS, Crust. Norway v.
- Dactylopus maldivensis*, Maldive Ids., p. 1031, figg. on pl. xcix; WOLFENDEN, Fauna Maldive ii, Suppl. i, **n. sp.**
- Dactylopusia*, p. 125, *thisboides*, p. 126, pl. lxxvii & lxxviii, fig. 1, *vulgaris* **n. nom.** for *strömi* Claus, p. 128, pl. lxxix, fig. 1, *brevicornis*, p. 130, pl. lxxx; SARS, Crust. Norway v.
- D. valida*, p. 293, *ornata*, p. 294, *purpurocincta*, p. 295, S. England; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv: *D. neglecta*, p. 127, pl. lxxviii, fig. 2, *micronyx*, p. 129, pl. lxxix, fig. 2, Norway; SARS, Crust. Norway v: **n. spp.**
- Delavalia pygmaea*, off Northumberland, p. 214, pl. iii, figg. 5-10; BRADY, Tr. Soc. Northumb. (n. s.) i: *D. normani*, British Seas, p. 569; SCOTT, Ann. Nat. Hist. (7) xvi: **n. spp.**
- Diaptomus conifer*, p. 147, pl. ix, fig. 10; DADAY, Zoologica xviii (44): *D. blanci*, p. 687, pl. xxv, figg. 9-11, *pectinicornis*, p. 690, pl. xxv, figg. 12-14; VAN DOUWE, Zool. Jahrb. Syst. xxii: *D.*, notes on spp., breeding habits etc.; WOLF, Zool. Jahrb. Syst. xxii, pp. 101-280.
- D. falcifer*, p. 148, pl. ix, figg. 11-15, *anisitsi*, p. 149, pl. ix, figg. 16-22, Paraguay; DADAY, Zoologica xviii (44), **n. spp.**
- Dicheilestium sturionis*, p. 111, pl. v, figg. 17-24, pl. vi, figg. 1-6; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Doropygus pulex*, p. 2, pl. iv, figg. 10-12; BRIAN, Annuar. Mus. Univ. Napoli i (24).
- Dyspontius curticaudatus*, Firth of Forth, p. 148, pl. xiii, figg. 1-10; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii, **n. sp.**
- Echetus typicus*, p. 611, pl. xvii; WILSON, P. U. S. Mus. xxviii.
- Ectinosoma australe*, p. 377, pl. xv, figg. 21-35; SARS, Zool. Jahrb. Syst. xxi.
- Eucheta marina*, p. 1007, figg. on pl. c, var., p. 1008, fig. on pl. c, *concinna*, p. 1008, figg. on pl. c; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- E. tumidula*, p. 15, *porrecta*, p. 16, *gracilis*, p. 16, *incisa*, p. 17, N. Atlantic; SARS, Bull. Mus. Monaco xxvi: *E. indica*, Maldive Ids., p. 1008, figg. on pl. c; WOLFENDEN, Fauna Maldive ii, Suppl. i: **n. spp.**
- Euchirella rostrata* var. *magnus* [**n. var.**], p. 18, *venusta*, p. 18, *brevis*, p. 18, *atlantica*, p. 20; WOLFENDEN, Plankton Studies i: *E. bella* var. *bella*, p. 1006, figg. on pl. xcvi; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- E. brevis*, N. Atlantic, p. 12; SARS, Bull. Mus. Monaco xxvi: *E. hirsuta*, p. 17, pl. vi, *maxima*, p. 18, pl. vi, *elongata*, p. 19, pl. vi, *spinosa*, p. 19, pl. vi, Atlantic; WOLFENDEN, Plankton Studies i: **n. spp.**
- Eudactylina nigra*, Massachusetts, p. 131; WILSON, P. Soc. Washington xviii, **n. sp.**
- Euryte longicauda* var. *minor* **n. var.**, p. 143, pl. x, figg. 13 & 14; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Eurytemora hermani* var. *minor* **n. var.**, p. 49, pl. ii, figg. 1 & 2; T. SCOTT, Tr. Soc. Glasgow vii (1).
- Euterpe acutifrons*, p. 1034, figg. on pl. xcix; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- Guistanus holti*, W. of Ireland, p. 33, pl. vi, figg. 1-12, as **n. sp.**, identified with *G. latifrons* Sars, in Addendum; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii.

- G. minor*, W. of Ireland, p. 34, pl. v, figg. 1-11; FARRAN, t. c. : *G. latifrons*, p. 11, *curvicornis*, p. 11, *robustus*, p. 11, *inermis*, p. 12, N. Atlantic; SARS, Bull. Mus. Monaco xxvi : *G. antarctica*, Antarctic, p. 7, pl. iii, *longispinus*, Atlantic, p. 7, pl. iii; WOLFENDEN, Plankton Studies i : n. spp.
- Gaidius affinis*, p. 9, *notacanthus*, p. 9, *cryptospinus*, p. 10, *divaricatus*, p. 10, N. Atlantic; SARS, Bull. Mus. Monaco xxvi : *G. intermedius*, Antarctic, p. 6, pl. iii; WOLFENDEN, Plankton Studies i : n. spp.
- Gausia* n. g. (near *Metridia*) *scotti* (as "nov. sp." in error), p. 5, pl. ii; WOLFENDEN, t. c.
- Gloiopotes ornatus*, Woods Holl, p. 127; WILSON, P. Soc. Washington xviii, n. sp.
- Halicyclops propinquus*, Chatham Ida., p. 395, pl. xviii, figg. 135-149; SARS, Zool. Jahrb. Syst. xxi, n. sp.
- Halithalestria* n. g. (*Thalestridae*), p. 117, *croni*, p. 118, pl. lxxii; SARS, Crust. Norway v.
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- H. ocellatus*, S. Atlantic, p. 14, pl. v; WOLFENDEN, Plankton Studies i, n. sp.
- Harpacticus fulvus*, phototropism etc.; BOHN, C.R. Soc. Biol. lix, 1905 (37), pp. 650-652 : *H. uniremis*, p. 147, pl. x, fig. 20; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Hatschekia* (*Clavella*) *obesa* [? n. sp.], p. 217, pl. xiii, figg. 1 & 1a, text-fig. 1, *H. (Cycnus) pagellii* [? err. for *pagelli*] *bogueravei*, p. 218, pl. xiii, figg. 2-2c, text-fig. 2; GOGGIO, Arch. zool. ital. ii.
- H. cernue*, on *Cerna gigas*, Palermo, p. 219, pl. xiii, fig. 3, text-fig. 3, *richiardi* on *Labrus merula*, Pisa, p. 222, pl. xiii, fig. 4, text-fig. 4; GOGGIO, t. c. n. spp.
- Herrmannella parva*, Plymouth, p. 299; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv, n. sp.
- Hersiliodes pelseneeri*, p. 278; PÉREZ, C.R. Soc. Biol. lviii.
- Heteroscope weimanni*, breeding habits etc.; WOLF, Zool. Jahrb. Syst. xxii, pp. 101-280.
- Heterorhabdus*, notes on spp., p. 44; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii : *H. grandis*, p. 8, pl. iv, *grimaldi*, p. 10, pl. iv, *major*, p. 11, pl. iv, *brevicornis*, p. 11, *profundus*, p. 12, pl. iv, *austrianus*, p. 13, pl. iv; WOLFENDEN, Plankton Studies ii.
- H. latus*, N. Atlantic, p. 9; SARS, Bull. Mus. Monaco xl : *H. brevicaudatus*, p. 12, pl. iv, *atlanticus*, p. 13, Atlantic; WOLFENDEN, Plankton Studies i : n. spp.
- Homoiotes* n. g. (*Caligidæ*) *palliat*a (loc. l.), p. 661, pl. xxix; WILSON, P. U. S. Mus. xxviii, n. sp.
- Idya*, p. 87, *furcata*, p. 88, pls. li & lii, fig. 1, *minor*, p. 90, pl. lii, fig. 2, *ensifer*, p. 90, pl. liii, fig. 1, *longicornis*, p. 92, pl. liv, fig. 1, *gracilis*, p. 94, pl. lv, fig. 1; SARS, Crust. Norway v.
- I. tenera*, p. 91, pl. liii, fig. 2, *elegantula*, p. 93, pl. liv, fig. 2, *angusta*, p. 95, pl. lv, fig. 2, *finmarchica*, p. 96, pl. lvi, Norway; SARS, t. c. n. spp.
- Idyella* n. g. (*Idyidae*), p. 99, *pallidula*, p. 100, pl. lviii, fig. 1, *exigua*, p. 101, pl. lviii, fig. 2, Norway; SARS, t. c. n. spp.
- Idyopsis* n. g. (*Idyidae*), p. 97, *dilatata*, p. 98, pl. lvii, fig. 1, *pusilla*, p. 99, pl. lvii, fig. 2, Norway; SARS, t. c. n. spp.
- Labidocera centica*, p. 49, pl. ii, figg. 3 & 4; T. SCOTT, Tr. Soc. Glasgow vii (1) : *L. kroyeri* var. *similis* n. var., p. 1016, figg. on pl. xcvi, *wollastoni*, p. 1017, figg. on pl. xcvi, *detruncata* var., p. 1017, figg. on pl. xcvi, *minuta*, p. 1018, figg. on pl. xcvi, *laevidentata*, p. 1019, figg. on pl. xcvi; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- Laophonte mohammed*, p. 685, pl. xxv, figg. 7 & 8; VAN DOUWEL, Zool.

- Jahrb. Syst. xxii : *L. mohammed*, distribution, p. 347; ZYKOFF, Zool. Anz. xxix.
- L. chathamensis*, p. 391, pl. xvii, figg. 103-118, *exigua*, pl. xviii, figg. 119-134, Chatham Ida.; Sars, Zool. Jahrb. Syst. xxi : *L. longisemina*, Firth of Forth, p. 145, pl. xi, figg. 10-20; T. Scott, Rep. Fish. Board Scotland xxiii, Pt. iii : n. spp.
- Laophontina* n. g. (near *Laophonte*) *dubia*, Scilly Ida., p. 292; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv, n. sp.
- Longipedia coronata*, p. 143, pl. x, figg. 15-17; T. Scott, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Lophothrix humilifrons*, N. Atlantic, p. 22; Sars, Bull. Mus. Monaco xxvi, n. sp.
- Lovenula mea*, Orange River Colony, p. 300, pl. xviii, figg. 7-13; GURNEY, P. Zool. Soc. London 1904, ii (2) 1905, n. sp.
- Lepeophtheirus sturionis*, p. 110, pl. v, figg. 7-14; T. Scott, Rep. Fish. Board Scotland xxiii, Pt. iii : *L. thompsoni*, p. 619, pl. xviii, figg. 212-219, *nordmannii*, p. 623, pl. xix, *hippoglossi*, pl. xx, text-fig. 6, *salmonis*, p. 640, pl. xxiv, *pacificus*, p. 642, pl. xxv, figg. 304-310, *cosyphi*, p. 644, pl. xxv, figg. 311-313, *robustus*, p. 646, pl. xxv, figg. 314 & 315; WILSON, P. U. S. Mus. xxviii.
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- Lernaea lueci*, p. 113, pl. vi, fig. 18; T. Scott, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Lernaeenicus sardina*, fixation to host; BAUDOUIN, C.R. Ac. Sci. cxl, p. 826 : *L. encrasicoli*, p. 299; BAUDOUIN, Bull. Mus. Paris xi, 1905 (5), pp. 299 & 300 : *L. spratta* (?), p. 165; CLIGNY, C.R. Soc. Biol. lix, 1905.
- Lubbockia minuta*, W. of Ireland, p. 15; WOLFENDEN, Plankton Studies i, n. sp.
- Lucicutia atlantica*, p. 44, pl. xiii, figg. 5-10; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii : *L. grandis*, p. 8, pl. ii; WOLFENDEN, Plankton Studies i.
- L. curta*, W. of Ireland, p. 44, pl. xii, figg. 1-7; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii : *L. gracilis*, p. 8, *intermedia*, p. 8, *aurita*, p. 8, N. Atlantic; Sars, Bull. Mus. Monaco xl : *L. bicornuta* (locality ?), p. 24, pl. ii; WOLFENDEN, Plankton Studies i : n. spp.
- Machairopus*, p. 84, *minutus*, Norway, p. 86, pl. i; Sars, Crust. Norway v, n. sp.
- Macrocalanus* n. g. (*Calanidae*) *longicornis*, N. Atlantic, p. 7; Sars, Bull. Mus. Monaco xxvi, n. sp.
- Megacalanus princeps*, p. 3, pl. i; WOLFENDEN, Plankton Studies i.
- M. bradyi*, p. 1, pl. i, W. of Ireland etc.; WOLFENDEN, t. c. n. sp.
- Mesocheres* n. g. (near *Scottocheres*), p. 297, *anglicus*, Plymouth, p. 298; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv, n. sp.
- Mesochra meridionalis*, Chatham Ida., p. 389, pl. xvii, figg. 87-102; Sars, Zool. Jahrb. Syst. xxi, n. sp.
- Mesorhabdus* n. g. (*Heterorhabdidae*), *annectens*, N. Atlantic, p. 9; Sars, Bull. Mus. Monaco xl, n. sp.
- Metaboeckella* n. g. (near *Boeckella*), *dilatata*, p. 603, text-figg. 1 & 2; EKMAN, Zool. Anz. xxix.
- Metridia macrura*, N. Atlantic, p. 7; Sars, Bull. Mus. Monaco xl, n. sp.
- Microsetella rosea*, p. 213, pl. iii, figg. 1-4; BRADY, Tr. Soc. Northumb. (n. s.) i.

- Microthalestris* n. g. (*Thalestridae*), p. 122, *forficula*, p. 123, pl. lxxvi; Sars, Crust. Norway v.
- Monacilla* n. g. (*Pseudocalanidae*), p. 8, *typica*, N. Atlantic, p. 9; Sars, Bull. Mus. Monaco xxvi, n. sp.
- Monstrilla* in *Salmacina*, at Port Erin; ASHWORTH, P. Liverp. biol. Soc. xix, p. 16.
- Mormonilla atlantica*, Atlantic, p. 16; WOLFENDEN, Plankton Studies i, n. sp.
- Nesippus alatus*, Massachusetts, p. 130; WILSON, P. Soc. Washington xviii, n. sp.
- Nitocra simplex*, p. 435, text-fig. 7; DOUWE, Zool. Anz. xxviii: *N. palustris*, p. 519, text-figg. 1-6; DOUWE, op. cit. xxix.
- N. muelleri*, Ryckflusse, p. 434, text-figg. 1-6; DOUWE, op. cit. xxviii: *N. fragilis*, Chatham Ids., p. 386, pl. xvi, figg. 70-86; Sars, Zool. Jahrb. Syst. xxi: n. spp.
- Oithona rigida*, p. 1023, pl. xcix, fig. 42, *robusta*, p. 1024, figg. on pl. xcix, *linearis*, p. 1025, figg. on pl. xcix; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- O. tropica*, Maldive Ids., p. 1023, figg. on pl. xcix; WOLFENDEN, t. c. n. sp.
- Oncaea anglica*, off Northumberland, p. 220, pl. vi, figg. 1-9; BRADY, Tr. Soc. Northumb. (n. s.) i, n. sp.
- Onchocalanus* n. g. (*Phaennidae*), p. 19, *trigoniceps*, p. 20, *hirtipes*, p. 20, N. Atlantic; Sars, Bull. Mus. Monaco xxvi, n. spp.
- Oöthrix* n. g. (*Calanidae*) *bidentata*, W. of Ireland, p. 42, pl. x, figg. 15-18, pl. xi, figg. 1-10; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii, n. sp.
- Parabroteas*, def. and notes, p. 598; EKMAN, Zool. Anz. xxix.
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- Parasthenelia anglica*, Cornwall, p. 289; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv, n. sp.
- Parathalestris*, p. 110, *clausi*, p. 111, pls. lxx & lxxi, *harpacticoides*, p. 112, pl. lxxvii, *hibernica*, p. 113, pl. lxxviii, *jacksoni*, p. 114, pl. lxxix; Sars, Crust. Norway v.
- Pelidium conspicuum*, Scilly Ids., p. 296; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv: *P. elegans*, Maldive Ids., p. 1033, figg. on pl. xcix; WOLFENDEN, Fauna Maldive ii, Suppl. i: n. spp.
- Pennella balænoptera*, p. 80, text-fig. 3; ANTHONY & CALVET, Bull. Soc. Philom. vii (2): *P. filosa*, post-larval stages; THOMPSON, Biol. Bull. viii, pp. 296-307, 6 text-figg.: *P. balænoptera*, anatomy; TURNER, P. R. Soc. Edinb. xxv, p. 480, and Tr. R. Soc. Edinb. xli (2), pp. 409-434, 4 pls.: *P. orthogorisci*, p. 119; STEBBING, S. African Crust. iii.
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- Phyllothalestris* n. g. (*Thalestridae*), p. 115, *mysia*, p. 116, pls. lxx & lxxi; Sars, Crust. Norway v.
- Pleuromamma abdominalis*, p. 1011, figg. on pl. xcvi, *siphias*, p. 1012, figg. on pl. xcvi, *robusta*, p. 1012, figg. on pl. xcvi; WOLFENDEN, Fauna Maldive ii, Suppl. i.
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- Pontellopsis krimeri*, p. 1021, figg. on pl. xcvi, *armata*, p. 1022, figg. on pl. xcix; WOLFENDEN, t. c.
- Pontoptilus* n. g. (*Augaptilidae*), p. 18, *mucronatus*, p. 18, *muticus*, p. 19, *robustus*, p. 19, *abbreviatus*, p. 19, *attenuatus*, p. 20, *acutilobus*, p. 21, N. Atlantic; Sars, Bull. Mus. Monaco xl, n. spp.

- Poppella guernei*, p. 692, pl. xxv, figg. 15-17; VAN DOUWE, Zool. Jahrb. Syst. xxii. [See also *Calanipeda*.]
- Porcellidium tuberculatum*, Maldive Ids., p. 1034, figg. on pl. xcix; WOLFENDEN, Fauna Maldive ii, Suppl. i, n. sp.
- Psamathe*, p. 82, *longicauda*, p. 83, pl. xlix; SARRS, Crust. Norway v.
- Pseudeuchata* n. g. (*Euchetidae*) *brevicauda*, N. Atlantic, p. 18; SARRS, Bull. Mus. Monaco xxvi, n. sp.
- Pseudoboeckella*, def., notes, and list of spp.; ERMAN, Zool. Anz. xxix.
- Pseudocyclopia giesbrechti*, p. 141, pl. x, figg. 1-9; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Rhynchothalestris* n. g. (*Thalestridae*), p. 119, *rufocincta*, p. 120, pls. lxxiii & lxxiv, *helgolandica*, p. 121, pl. lxxv; SARRS, Crust. Norway v.
- Saphirella tropica*, Maldive Ids., p. 1030, figg. on pl. xcix; WOLFENDEN, Fauna Maldive ii, Suppl. i, n. sp.
- Sapphirina salpa*, p. 2, pl. iv, fig. 9; BRIAN, Annuar. Mus. Univ. Napoli i (24).
- Schizopera* n. g. (*Diosaccidae*), p. 383, *longicauda*, Chatham Ids., p. 384, pl. xvi, figg. 53-69; SARRS, Zool. Jahrb. Syst. xxi, n. sp.
- Scolecithricella gracilis*, N. Atlantic, p. 21; SARRS, Bull. Mus. Monaco xxvi, n. sp.
- Scolecithrix chelifera*, p. 36, pl. vii, figg. 18 & 19; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii.
- S. emarginata*, p. 36, pl. vii, figg. 6-17, *ovata*, p. 37, pl. vi, figg. 13-18, pl. vii, figg. 1-5, *echinata*, p. 37, pl. iv, figg. 15-18, pl. v, figg. 12-17, W. of Ireland; FARRAN, t. c. n. spp.
- Scottocalanus* n. g. (*Scolecithricidae*) *acutus*, N. Atlantic, p. 7; SARRS, Bull. Mus. Monaco xl, n. sp.
- Scottula abyssalis*, N. Atlantic, p. 22; SARRS, t. c. n. sp.
- Sphaeronella minuta*, p. 149, pl. xii, fig. 18, pl. xiii, fig. 16, var. *valida* n. var., p. 149, pl. xiii, figg. 17-20; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- S. aore*, on *Aora gracilis*, Dornoch Firth, *vararensis*, on *Megaluropus agilis*, Moray Firth, p. 150, pl. xiii, figg. 12-15; T. SCOTT, t. c. n. spp.
- Spinocalanus magnus*, p. 30, pl. iii, figg. 1-12; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii.
- Stenhelia meeki*, off Northumberland, p. 216, pl. iv, figg. 7-16; BRADY, Tr. Soc. Northumb. (n. s.) i: *S. pygmaea*, p. 284, *simulans*, p. 285, *neglecta*, p. 286, *varians*, p. 287, *longirostris*, p. 288, British coasts; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv: n. spp.
- Tetragoniceps bradyi*, p. 217, pl. v, figg. 1-10; BRADY, Tr. Soc. Northumb. (n. s.) i.
- Thalestris*, p. 103, *longimana*, p. 104, pls. lix & lx, *gibba*, p. 105, pl. lxi, *rufoviolacens*, p. 107, pl. lxii; SARRS, Crust. Norway v.
- T. robusta*, p. 218, pl. v, figg. 11-17, *denti*, p. 218, pl. vi, figg. 10-15, off Northumberland; BRADY, Tr. Soc. Northumb. (n. s.) i: *T. brunnea*, p. 108, pl. lxiii, *purpurea*, p. 109, pl. lxiv, Norway; SARRS, Crust. Norway v: n. spp.
- Thaumaleus tropicus*, Maldive Ids., p. 1025, figg. on pl. xcix; WOLFENDEN, Fauna Maldive ii, Suppl. i, n. sp.
- Thompsonula* n. g. for *Jonesiella hyanae* Thompson, p. 570; SCOTT, Ann. Nat. Hist. (7) xvi.
- Undeuchata obtusa*, p. 13, *pustulifera*, p. 14, *scopularis*, p. 14, *dubia*, p. 15, N. Atlantic; SARRS, Bull. Mus. Monaco xxvi, n. spp.
- Valdiviella brevicornis*, N. Atlantic, p. 17; SARRS, t. c. n. sp.
- Wolterstorffia blanchardi*, p. 683, pl. xxv, figg. 1-6; VAN DOUWE, Zool. Jahrb. Syst. xxii.
- Xanthocalanus borealis*, p. 38, pl. viii, figg. 14-17; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii.

Xanthocalanus greeni, p. 39 (and addendum), pl. viii, figg. 1-13, *pinguis*, p. 39, pl. viii, figg. 18-24, pl. ix, figg. 1-6, *obtusius*, p. 40, pl. ix, figg. 10-19, sp. ? , p. 41, pl. ix, figg. 7-9, pl. xi, fig. 11, W. of Ireland; FARRAN, t. c. : *X. muticus*, N. Atlantic, p. 19; SARA, Bull. Mus. Monaco xxvi : n. spp.

3. BRANCHIURA.

[See also T. SCOTT (272).]

Branchiura, Notes on British spp.; SCOURFIELD, J. Quekett Club (2) ix, p. 40.

Argulus, notes on spp.; WILSON, Bull. Bureau Fisheries xxiv, pp. 117-131, text-figg.

4. OSTRACODA.

[See also BUCHINSKAIO (47), CHUN (71), HUBER (141), +HUCKE (142), +JONKER (151), +KAZANSKIÏ (156), LEBEDINSKIÏ (166), MONTI (185), T. SCOTT (266), +SHIMER (281), MEISSNER (181).]

Ostracoda, list of marine and freshwater species from Ireland with notes on synonymy etc.; NORMAN, Irish Natural. xiv.

Ostracoda, list of British freshwater spp. with notes; SCOURFIELD, J. Quekett Club (2) ix, pp. 29-44.

Anchistrocheles bradyi, p. 373, pl. i, figg. 34 & 35, Gulf of Manaar; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, n. sp.

+*Aparchites* (?) *anderssoni*, p. 45, pl. i, figg. 25-28, *fennicus*, p. 46, pl. iii, fig. 51, Silurian, N. Baltic region; WIMAN, Bull. Geol. Inst. Upsala vi, n. spp.

Bairdia inornata, p. 372, pl. i, figg. 11 & 12, *robusta*, p. 373, pl. i, figg. 13 & 14, Gulf of Manaar; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, n. spp.

+*B. foveolata* (?), p. 272; CHAPMAN, P. Linn. Soc. N. S. Wales cxviii.

+*B. (?) tenuis*, Oligocene, Mainz, p. 30, pl. ii, fig. 14; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, n. sp.

+*Beyrichia dagon*, p. 918, pl. v, figg. 12-14; LOOMIS, Bull. N. York Mus. lxix.

+*B. argentina*, Devonian, Argentine, p. 250, pl. xi, fig. 4; THOMAS, Zeitschr. Deutsch. geol. Ges. lvii (2), n. sp.

+*Beyrichona gevalensis*, p. 46, pl. i, figg. 29, 30 & 35, *fabia*, p. 47, pl. iii, fig. 52, (?) *alta*, p. 47, pl. iii, fig. 53, Silurian, N. Baltic region; WIMAN, Bull. Geol. Inst. Upsala vi, n. spp.

+*Bradorona nitida*, Silurian, N. Baltic region, p. 48, pl. i, figg. 34, 36, 37; WIMAN, t. c. n. sp.

Candona parva, Paraguay, p. 258, pl. xvi, figg. 27-29, pl. xvii, figg. 1-7; DADAY, Zoologica xviii (44), n. sp.

+*C. rostrata*, p. 329, pl. viii, figg. 8-11, text-fig. 2, *fabaeformis*, p. 330, pl. viii, figg. 12-14, text-fig. 3; SIEBER, Jahresh. Ver. Wurttemb. lxi.

+*C. candidula*, p. 21, pl. i, fig. 5, *recta*, p. 22, pl. i, fig. 6, *rhenana*, p. 23, pl. i, fig. 7, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905: +*C. steinheimensis*, Tertiary, Württemberg, p. 327, pl. viii, figg. 1-7, text-fig. 1; SIEBER, Jahresh. Ver. Wurttemb. lxi : n. spp.

Candonopsis anisleri, Paraguay, p. 256, pl. xvi, figg. 16-26; DADAY, Zoologica xviii (44), n. sp.

+*C. arida*, Tertiary, Württemberg, p. 332, pl. viii, figg. 15-19, text-fig. 4; SIEBER, Jahresh. Ver. Wurttemb. lxi, n. sp.

Codonocera cruenta, p. 367, pl. ii, figg. 43-45; A. SCOTT, Rep. Ceylon Pearl Fisheries iii.

- †*Cuneocythere punctulata*, Oligocene, Mainz, p. 48, pl. iv, fig. 25; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, **n. sp.**
- †*Cylocypris* sp., p. 346, text-fig. 16; SIEBER, Jahresh. Ver. Wurttemb. lxi.
- †*C. similis*, Tertiary, Mainz, p. 18, pl. i, fig. 3; LIENENKLAUS, Ber. Senckenberg. Ges. 1905: †*C. nitida*, Tertiary, Württemberg, p. 333, text-fig. 5; SIEBER, Jahresh. Ver. Wurttemb. lxi : **n. spp.**
- Cyprina pellucida*, p. 255, pl. xvi, figg. 10-15; DADAY, Zoologica xviii (44).
- C. denticulata*, Paraguay, p. 254, pl. xvi, figg. 5-9; DADAY, t. c. **n. sp.**
- †*C. curvata*, Miocene, Mainz, p. 19, pl. i, fig. 4; LIENENKLAUS, Ber. Senckenberg. Ges. 1905: †*C. suborbicularis*, Tertiary, Württemberg, p. 334, pl. viii, figg. 20-22, text-fig. 6; SIEBER, Jahresh. Ver. Wurttemb. lxi : **n. spp.**
- Cypridina mediterranea*, female reproductive organs; RAMSCH, Zool. Anz. xxix, pp. 133-136, 1 text-fig.
- Cypridopsis villosa* var. *crassipes* **n. var.**, p. 125, *dubia* **n. nom.** for *villosa*, partim, p. 125; MASI, Boll. Soc. zool. Ital. (2) vi.
- †*C. sp.*, p. 345, text-fig. 15; SIEBER, Jahresh. Ver. Wurttemb. lxi.
- †*C. kinkelini*, Miocene, Mainz, p. 27, pl. ii, fig. 12; LIENENKLAUS, Ber. Senckenberg. Ges. 1905: †*C. gracilis*, Tertiary, Württemberg, p. 339, pl. ix, figg. 5-9, text-fig. 10; SIEBER, Jahresh. Ver. Wurttemb. lxi : **n. spp.**
- Cyprinotus americanus*, Nantucket, p. 791, pl. i; CUSHMAN, Amer. Natural. xxxix, **n. sp.**
- Cypris hispidosa*, p. 243; MASI, Monit. Zool. ital. xvi: *C. incongruens* var. *roseus* **n. var.**, p. 122, *kaufmanni* **n. nom.** for *reptans* Kauf., and var. *limbata* **n. var.**, p. 123, *intermedia* var. *latialis* **n. var.**, p. 124; MASI, Boll. Soc. zool. Ital. (2) vi.
- C. vinciguerra*, Rome, p. 241; MASI, Monit. Zool. ital. xvi: *C. onusta*, Rome, p. 119, text-figg. 1 & 2; MASI, Boll. Soc. zool. Ital. (2) vi : **n. spp.**
- †*C. (Cyprinotus) salina*, p. 336, pl. viii, figg. 25-27, text-fig. 8, *C. sp.*, p. 345, text-fig. 14; SIEBER, Jahresh. Ver. Wurttemb. lxi.
- †*C. agglutinans*, p. 24, pl. i, fig. 8, *acuta*, p. 25, pl. ii, fig. 9, *parva*, p. 26, pl. ii, fig. 10, *frankofurti*, p. 26, pl. ii, fig. 11, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905: †*C. risgovienensis*, pp. 335 & 346, pl. viii, figg. 23 & 24, text-figg. 7 & 16, *inaequalis*, p. 337, pl. ix, figg. 1-4, text-fig. 9, Tertiary, Württemberg; SIEBER, Jahresh. Ver. Wurttemb. lxi : **n. spp.**
- Cythere knoxi*, p. 377, pl. ii, figg. 9 & 10, *chalmersi*, p. 378, pl. ii, figg. 11 & 12, *imthurni*, p. 378, pl. ii, figg. 13 & 14, *thompsoni*, p. 379, pl. ii, figg. 15 & 16, *donnani*, p. 379, pl. ii, figg. 17 & 18, *willeyi*, p. 379, pl. ii, figg. 19 & 20, *hornelli*, p. 380, pl. ii, figg. 21 & 22, *halyi*, p. 380, pl. ii, figg. 23 & 24, *kelaarti*, p. 380, pl. ii, figg. 25 & 26, *willisi*, p. 380, pl. ii, figg. 27 & 28, *colletti*, p. 381, pl. ii, figg. 29 & 30, *holdsworthi*, p. 381, pl. ii, figg. 31 & 32, Gulf of Manaar; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, **n. spp.**
- †*Cythereis ramosa*, p. 32, pl. iii, fig. 16, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, **n. sp.**
- Cytherella ondaatjei*, p. 382, pl. ii, figg. 33 & 34, *vraspillai*, p. 382, pl. ii, figg. 35 & 36, Gulf of Manaar; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, **n. spp.**
- †*Cytheridea praesculcata*, p. 39, pl. iii, fig. 17, *rarefistulosa*, p. 41, pl. iii, fig. 18, *miocenica*, p. 42, pl. iii, fig. 19, *devera*, p. 43, pl. iii, fig. 20, *parallela*, p. 45, pl. iv, fig. 21, *fragilis*, p. 46, pl. iv, fig. 22, *spathacea*, p. 46, pl. iv, fig. 23, *minuta*, p. 47, pl. iv, fig. 24, *spandeli*, p. 65, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, **n. spp.**
- Cytheridella* **n. g. (Cytheridea)**, p. 261, *ilosvayi*, Paraguay, p. 262, pl. xvii, figg. 15-18, pl. xviii, figg. 1-11; DADAY, Zoologica xviii (44), **n. sp.**

- +*Cytheropteron punctulatum*, Oligocene, p. 56, pl. iv, fig. 30; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, **n. sp.**
- Cytherura concinna*, Gulf of Manaar, p. 376, pl. ii, figg. 7 & 8; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, **n. sp.**
- +*C. sulcata*, p. 55, pl. iv, fig. 29, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, **n. sp.**
- +*Entomis prosephina*, Upper Devonian, New York, p. 918, pl. v, figg. 10 & 11; LOOMIS, Bull. N. York Mus. lxi, **n. sp.**
- Erythrocypris herdmanni*, Gulf of Manaar, p. 372, pl. i, figg. 15 & 16; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, **n. sp.**
- Eucandona cyproides*, Paraguay, p. 260, pl. xvii, figg. 8-14; DADAY, Zoologica xviii (44), **n. sp.**
- Eucypris bennelong*, p. 247; DADAY, t. c.
- E. arguensis*, p. 243, pl. xv, figg. 11-13, *anisitsi*, p. 244, pl. xv, figg. 14-22, *tenuis*, p. 246, pl. xvi, figg. 1-4, Paraguay; DADAY, t. c. **n. spp.**
- +*Eucytherura dentata*, Oligocene, Mainz, p. 57, pl. iv, fig. 31; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, **n. sp.**
- +*Hipponicharion matthewi*, Silurian, N. Baltic region, p. 49, pl. i, figg. 40-44; WIMAN, Bull. Geol. Inst. Upsala vi, **n. sp.**
- Ilyocypris decipiens*, Rome, p. 127; MASI, Boll. Soc. zool. Ital. (2) vi, **n. sp.**
- +*Ilyocypris bradyi*, p. 340, pl. ix, fig. 10, text-fig. 11; SIEBER, Jahresh. Ver. Württemb. lxi.
- +*I. tribullata*, p. 28, pl. ii, fig. 13, *tuberculata*, p. 28, pl. iii, fig. 15, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905: +*I. binocularis*, Tertiary, Württemberg, p. 341, pl. ix, figg. 11, 18 & 19, text-fig. 12; SIEBER, Jahresh. Ver. Württemb. lxi : **n. spp.**
- +*Indiana* (?) *minima*, Silurian, N. Baltic region, p. 48, pl. i, figg. 38 & 39; WIMAN, Bull. Geol. Inst. Upsala vi, **n. sp.**
- +*Leperditia limatula*, Ordovician, Valcour Id., p. 380; RAYMOND, Amer. J. Sci. xx, **n. sp.**
- +*Limnocythere zinndorfi*, Oligocene, Mainz, p. 58, pl. iv, figg. 32 & 33, LIENENKLAUS, Ber. Senckenberg. Ges. 1905: +*L. esphigmena*, Tertiary, Württemberg, p. 343, pl. ix, figg. 12-17, text-fig. 13; SIEBER, Jahresh. Ver. Württemb. lxi : **n. spp.**
- Loxocncha punctata*, p. 401, pl. xix, figg. 162-172; SARRS, Zool. Jahrb. Syst. xxi.
- +*L. intorta*, p. 52, pl. iv, fig. 26, *sphenoides*, p. 52, pl. iv, fig. 27, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, **n. spp.**
- Paracypris tenuis*, Chatham Ids., p. 404, pl. xx, figg. 173-186; SARRS, Zool. Jahrb. Syst. xxi, **n. sp.**
- Paracytheridea perplexa*, Gulf of Manaar, pl. i, figg. 26 & 27; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, **n. sp.**
- Paradorostoma attenuatum*, p. 374, pl. i, figg. 32 & 33, *stebbingi*, p. 374, pl. ii, figg. 1 & 2, Gulf of Manaar; A. SCOTT, t. c. **n. spp.**
- Pontocypris robusta*, p. 370, pl. i, figg. 17 & 18, *elegans*, p. 371, pl. i, figg. 19 & 20, *rostrata*, p. 371, pl. i, figg. 21 & 22, *tumida*, p. 371, pl. i, figg. 30 & 31, Gulf of Manaar; A. SCOTT, t. c. **n. spp.**
- +*P. brevis*, p. 16, pl. i, fig. 1, *splendida*, p. 16, pl. i, fig. 2, Oligocene, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, **n. spp.**
- +*Primitiu latimarginata*, Ordovician, Chazy, p. 380; RAYMOND, Amer. J. Sci. xx, **n. sp.**
- Pseudocythere minuta*, Gulf of Manaar, p. 373, pl. i, figg. 28 & 29; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, **n. sp.**
- Sarsiella carinata*, p. 368, pl. i, figg. 1 & 2, pl. ii, figg. 40 & 41, *gracilis*, p. 368, pl. i, figg. 3 & 4, pl. ii, fig. 37, *similia*, p. 368, pl. i, figg. 5 & 6, pl. ii, fig. 38, *crispata*, p. 369, pl. i, figg. 7 & 8, pl. ii, fig. 39, *tumida*, p. 369, pl. i, figg. 9 & 10, pl. ii, fig. 42, Gulf of Manaar; A. SCOTT, t. c. **n. spp.**

- †*Sellula* [? n. g.] *fallax*, Silurian, N. Baltic region, p. 48, pl. i, figg. 31 & 32; WIMAN, Bull. Geol. Inst. Upsala vi, n. sp.
Xestolebe [*eris squamigera*, p. 375, pl. i, figg. 23-25, pl. ii, figg. 28 & 29, *irrasa*, p. 375, pl. ii, figg. 5, 6, 46 & 47, *tumida*, p. 375, pl. ii, figg. 3 & 4, Gulf of Manaar; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, n. spp.
 †*X. rhenana*, Oligocene, Mainz, p. 53, pl. iv, fig. 28; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, n. sp.

5. CIRRIPEDIA.

- [See also †BIGOT (16), BRAUN (37), †COUFFON (77), †DONCIEUX (99), †JOHNSON (149), KILER (161), †WEGNER (321).]
 Cirripedia, anatomy; GRUVEL, Arch. Mus. Paris vi (1 & 2), pp. 51-224, 8 pls., 27 text-figg.
Alepas gigas, Bali Straits, p. 80, pl. viii, figg. 3-3b, *malaysiana*, Gaspar Straits, p. 81, pl. viii, figg. 4 & 4a; ANNANDALE, Mem. Asiat. Soc. Bengal. i (5), n. spp.
Balanus sp., cultivated for use as manure in Japan; MITSUKURI, Bull. Bureau Fisheries xxiv, p. 287: *B. psittacus*; VAYSSIERE, Ann. Fac. Marseille xv (5), 9 pp., 1 pl.
Dendrogaster arborescens in *Dipsacaster sladeni*, Cape, p. 399, *ludwigi* in *Echinaster fallax*, Philippines, p. 401; LE ROI, Zool. Anz. xxix, n. spp.
Lepas fascicularis off W. of Ireland; FARRAN, Ann. Rep. Fish. Ireland 1902-1903, Pt. ii, App. vii, pp. 209 & 210.
Proteolepas hanseni, larva; STEUER, Arb. Inst. Wien xv (2), pp. 113-117 (1-5), 4 text-figg.
Scalpellum inerme, p. 75, pl. viii, figg. 1 & 1a and text-fig. 1, *sociabile*, p. 77, pl. viii, fig. 2 and text-figg. 2 & 3, Bali Straits; ANNANDALE, Mem. Asiat. Soc. Bengal i (5), n. spp.
 †*S. studei*, Molasse, p. 1, and pl.; TRÈCHE, Mt. Ges. Bern 1904 (1905), n. sp.

GIGANTOSTRACA

(XIPHOSURA, TRILOBITA, EURYPTERIDA).

I. TITLES.

- BALDWIN, WALTER. *Prestwichia anthrax* and *Belinurus lunatus* from Sparth Bottoms, Rochdale. Tr. Manchester Geol. Soc. xxix (4), pp. 124-127, 2 text-figg.
- BIGOT, —. Catalogue critique de la collection DeFrance, conservée au Musée d'histoire naturelle de Caen. Deuxième partie. Cephalopodes, Arthropodes et Vers. Bull. Soc. Normand. viii, pp. 250-273. [*Trilobita*, pp. 264 & 265.]
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II. SUBJECT-INDEX.

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 Osmotic pressure of blood of *Limulus* and permeability of gill-membranes; GARREY (9).
 Chitinous character of fossil *Pterygotus* from Oesel; ROSENHEIM (21).
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IV. SYSTEMATIC.

XIPHOSURA.

[See also GARREY (9), †PEACH & HORNE (18).]

†*Belinurus lunatus*, p. 126, text-fig. 2; BALDWIN, Tr. Manchester Geol. Soc. xxix (4).

Carcinocypius rotundicauda, specimen found at Isle of Wight; TEGETMEIER, P. Zool. Soc. London 1904, ii (2), p. 181.

Limulus, physiology of heart; CARLSON, Biol. Bull. viii, p. 152, and Amer. J. Physiol. xiii, pp. 217-240, 16 text-figs.

†*Prestwichia anthrax*, p. 124, text-fig. 1; BALDWIN, Tr. Manchester Geol. Soc. xxix (4).

†TRILOBITA.

[See also BIGOT (2), FELIX (8), HIND AND OTHERS (10), JONKER (11), KAZANSKIĖ (12), MANSUY (15), PEACH & HORNE (18), SHEARSBY (24), SHIMER (25), WALCOTT (28).]

Acerocare norvegicum, p. 63, pl. iii, figg. 19-30; WIMAN, Bull. Geol. Inst. Upsala vi.

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Agnostus glabratus, p. 12, pl. i, figg. 27 & 28, var. *ingricus*, p. 13, pl. i, figg. 23 & 24, *lenticiformis*, p. 13, pl. i, figg. 21 & 22, *A. sp.*, p. 14, pl. i, figg. 25 & 26; WIMAN, Arkiv Zool. ii, No. 11.

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- Ceratopyge forficula*, p. 64, pl. iii, fig. 39; WIMAN, Bull. Geol. Inst. Upsala vi.
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†EURYPTERIDA.

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- Eurypterus pittsfordensis*, Devonian, New York, p. 1098, figg. on pls. i-xxv; SARLE, Bull. N. York Mus. lxi, n. sp.
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Pterygotus monroensis, Devonian, New York, p. 1102, pl. xxiv, figg. 7 & 9; SARLE, t. c. n. sp.

PYCNOGONIDA.

I. TITLES.

APPELLØF. [See NORDGAARD (12).]

1. BOUVIER, E. L. Observations préliminaires sur les Pycnogonides recueillis dans la région antarctique par la mission du "Français." Bull. Mus. Paris xi (1905), pp. 294-298.
2. CARPENTER, GEORGE H. The Marine Fauna of the Coast of Ireland. Part vi. Pycnogonida. Fisheries, Ireland, Sci. Invest. 1904, iv (1905), 8 pp., 3 pls.
3. COLE, LEON J. Pycnogonida collected at Bermuda in the summer of 1903. P. Boston Soc. xxxi (8), pp. 315-328, pls. xx-xxii (1904).
4. —. Ten-legged Pycnogonida, with remarks on the Classification of the Pycnogonida. Ann. Nat. Hist. (7) xv, pp. 405-415. Note on p. 413 by T. V. HODGSON.
5. COLGAN, NATHANIEL. Notes on the Invertebrate Fauna of Skerries, Co. Dublin. Irish Natural. xiv, pp. 205-213.

DANTAN. [See HALLEZ (7).]

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7. —. Notes fauniques. Arch. zool. exp. Notes (4) iii, pp. xlvii-lit. Pantopodes, by DANTAN, p. l.
8. HODGSON, T. V. Preliminary report of the Biological collections of the "Discovery." Geogr. Journ. 1905, pp. 396-400.
9. —. Scotia Collections.—On *Decalopoda australis* Eighty—an old Pycnogonid rediscovered. P. Phys. Soc. Edinb. xvi, pp. 35-42, pls. iii & iv.
10. —. *Decalopoda* and *Colossendeis*. Zool. Anz. xxix, pp. 254-256.
 —. [See also COLE (4).]
11. LOMAN, J. C. C. *Decalopoda* Eighty oder *Colossendeis* Jarz. Zool. Anz. xxviii, pp. 722 & 723.
12. NORDGAARD, O. [& others]. Hydrographical and biological investigations in Norwegian Fjords.... 4to, Bergen, 1905, 254 pp., 21 pls., 10 text-figg.
Pycnogonida, p. 189, by APPELLØF.

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Ammothella appendiculata, p. 323, pl. xxi, figg. 15-18, pl. xxii, figg. 19 & 20; COLE, P. Boston Soc. xxxi (8).

Anoplodactylus insignis bermudensis n. subsp., p. 325, pls. xx & xxii, figg. 21-29; COLE, t. c.: *A. typhlops*, ♂, p. 5, pl. iii, figg. 12-19; CARPENTER, Fisheries, Ireland, Sci. Invest. 1904, iv (1905).

A. oculus, W. of Ireland, 306 fath., p. 4, pl. ii, figg. 7-11; CARPENTER, t. c. n. sp.

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Nymphon gracile and other spp., notes on synonymy, p. 2; CARPENTER, Fisheries, Ireland, Sci. Invest. 1904, iv (1905).

Pallenopsis holti, W. of Ireland, 382 fath., p. 4, pl. i, figg. 1-6; CARPENTER, t. c. n. sp.

Pentanymphe, morphology; COLE, Ann. Nat. Hist. (7) xv, pp. 405-415.

Phoxichilidium femoratum, larvæ in *Bougainvillia*; HALLEZ, Arch. Zool. exp. (4) iii, pp. 133-144, pl. vi.

XI. ARACHNIDA

(Including TARDIGRADA AND PENTASTOMIDA).

BY

A. S. HIRST.

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† *Eoscorpius sparthensis*, middle coal measures, Rochdale, p. 79; BALDWIN,
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† This sign when prefixed to a quotation indicates a fossil form or forms. Where
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- S. simonis*, Venezuela, p. 42, pls. 1 & 2, *flavescens*, Venezuela, p. 44, pl. 2, *dispar*, Martinique, p. 46, pl. 3, *insignis*, Martinique, p. 47, pl. 3, *latipes*, Seychelles, p. 49, pl. 4; HANSEN & SÖRENSEN, t. c. n. spp.
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- Oribates gracilis* var. *major* n. var., Ireland, p. 29, pl. ii, *elimatus* var. *longiplumus* n. var., Italy, p. 30, pl. i, *alatus* var. *integer* n. var., Italy, p. 30, pl. i; BERLESE, Redia ii: *O. elimatus* var. *corniculatus* n. var., p. 171, pl. xvii; BERLESE, t. c.
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- Seius quadripilis*, Florida, p. 138; BANKS, P. ent. Soc. Washington vii, n. sp.
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- Pentastomum constrictum*, Senegal, p. 78, text-figg. a-d; THIROUX, C.R. Soc. Biol. lix.

XII. MYRIOPODA AND PROTO-TRACHEATA.

BY

F. SILVESTRI.

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INTRODUCTION.

THE number of papers published on Myriopoda in the year 1905 is 48 ; rather less than in 1904.

Morphology has received contributions by SINCLAIR (38) in a paper on some points of the anatomy of *Platydesmus*, and by VERHOEFF (40-44) on *Lithobiidae* and *Scutigera*, in which the authors treat also the post-embryonal development of the Chilopoda in question.

The spermatogenesis of *Scutigera* and *Scolopendra* has been carefully studied by MEDES (26) and BLACKMAN (3); and the cytoplasmic formations of germ-cells in *Scolopendra* by BOUIN (5).

KRAEPELIN has published an important paper (24) on the distribution of *Scolopendridæ*.

In the systematic department, BRÖLEMANN (6-9), CARL (10), RIBAUT (31), SILVESTRI (36), and VERHOEFF (41-46) have contributed descriptions of new genera and species, but their number is not large.

For the *Prototracheata* the year 1905 is memorable for the publication of the first part of the valuable monograph of BOUVIER.

MYRIOPODA.

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2. BERTHOUMIEU, —. Revision de l'entomologie dans l'antiquité. Rev. Sci. Bourbonnaise, Dec. 1904. Myriopodes, p. 197.
3. BLACKMAN, M. W. The spermatogenesis of the Myriapoda. III. The spermatogenesis of the *Scolopendra heros*. Bull. Mus. Harvard xlviii, pp. 1-138, 9 pls., A-I text-figg. Abstract, Zool. Jahresber. 1905, *Arthropoda*, pp. 46 & 47.
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5. BOUIN, P. Ergastoplasme, Pseudochromosomes et Mitochondria. A propos des fonctions ergastoplasmiques des cellules seminales chez *Scolopendra cingulata*. Arch. Zool. exp. iii (4), pp. 99-132, pls. iv & v. Abstract, Zool. Zentrbl. xii, p. 772.
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- S. coleoptrata*, p. 77, *coleoptrata (genuina)*, South Tyrol, Portugal, Canary-Isla., p. 78; VERHOEFF, t. c.
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- S. forceps*, spermatogenesis; MEDES, Biol. Bull. ix, pp. 156-186, pls. ii-vi.
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- Scutigerina*, analytical key to the tribe; VERHOEFF, Zool. Anz. xxix, p. 75.
- Scutigerini* n. trib. (*Scutigerina*); VERHOEFF, t. c. p. 75.
- Sphendononema annulipes*, Kamerun; VERHOEFF, t. c. p. 99, n. sp.
- S. camerunense*, characters; VERHOEFF, t. c. pp. 99 & 100.
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- Agroperophilus* n. gen.; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi, p. 746.
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Colobodesmus n. gen. ; BRÖLEMANN, Ann. Soc. ent. France lxxiv, p. 347.
C. biolleyi, Costa Rica, p. 350, figg. 1-3, pl. viii, figg. 8-12, pl. ix, figg. 13 & 14 ; BRÖLEMANN, t. c. n. sp.

- Cordyloporus dilatatus*, p. 264, pl. iv, figg. 3-3b, *pulcher*, Cabo S. Juan, p. 267, pl. vi, fig. 5; CARL, Mem. Soc. Espan. i, n. spp.
- Cryptodesmus gabonicus*, Cabo S. Juan, p. 276, pl. vii, figg. 6 & 6a; CARL, t. c.
- Diaphorodesmus dorsicornis*, Cabo S. Juan, p. 271, pl. vi, figg. 1 & 1a; CARL, t. c.
- Julidesmus chilensis*, Chile, p. 727, pl. xxxiv, fig. 3; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi.
- Leptodesmus rodriguezi*, Costa Rica, p. 345; BRÖLEMANN, Ann. Soc. ent. France lxxiv.
- Monenchodesmus*; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi, p. 738.
- M. chilensis*, Talca (Chile), p. 739, pl. xxxv, fig. 20, *michaelseni*, Valparaiso, p. 740, pl. xxxv, fig. 21, *inermis*, Chile, pl. xxxv, fig. 22, *monticola*, L. Lacar (Chile), p. 741; SILVESTRI, t. c. and Revist. chilena, pp. 231-233.
- Neocordyloporus* n. subgen. of *Cordyloporus*, p. 269; CARL, Mem. Soc. Espan. i.
- N. asperus*, Cabo S. Juan, p. 269, pl. vi, figg. 4-4b; CARL, t. c. n. sp.
- Oxydesmus*; CARL, t. c. p. 274.
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- Platyrhacus biolleyi*, p. 341, *bivirgatus*, p. 341, *fraternus*, p. 342, *montivagus*, p. 342, Costa Rica; BRÖLEMANN, t. c.
- P. stenopterus*, Costa Rica, p. 343; BRÖLEMANN, t. c. n. sp.
- Pleonaraius pachyskeles*, S. Vicente (Chile), p. 725, pl. xxxiv, fig. 1, *omalonotus*, Coipue e Temuco (Chile), p. 726, pl. xxxiv, fig. 2; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi, and Revist. chilena ix, p. 225.
- Polydesmus complanatus*, remark on distribution after Berlese; VERHOEFF, Zool. Anz. xxix, p. 501.
- P. raffardi*, p. 3, figg. 1-3; BRÖLEMANN, Bull. Mus. Monaco, No. 23, n. sp.
- P. testaceus*, remark on figg. of C. L. Koch and synonymy; VERHOEFF, Zool. Anz. xxix.
- Semnosoma*; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi, p. 728, and Revist. chilena ix, p. 226.
- S. concolor*, Chile, p. 728, pl. xxxiv, figg. 4-6, *porteri*, Temuco, p. 729, pl. xxxiv, fig. 7, *intricatum*, Temuco, p. 730, pl. xxxiv, fig. 8, *subecarinatum*, p. 731, pl. xxxiv, fig. 9; SILVESTRI, t. c., *porteri*, *intricatum*, *subecarinatum*, also SILVESTRI, Revist. chilena ix, pp. 227 & 228.
- Strongylosoma juliforme* n. sp., Cabo S. Juan; CARL, Mem. Soc. Espan. i, p. 262, pl. vi, figg. 2 & 2a.
- Trichozonus* n. gen.; CARL, t. c. p. 272.
- T. escalerae*, Cabo S. Juan, p. 273, pl. vii, fig. 7; CARL, t. c. n. sp.
- Trienchodesmus*; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi, p. 736, and Revist. chilena ix, p. 230.
- T. gayanus*, Coipue (Chile), p. 737, pl. xxxv, fig. 19; SILVESTRI, t. c., and Revist. chilena ix, p. 231.

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- Allaiulus occultus* C. Koch = *Julus caeruleus* Nem. = *Cylindroiulus*; VERHOEFF, Zool. Anz. xxix, p. 500.
- A. punctatus*, *albicornis*, *occultus*, remarks on figg. of C. L. Koch, and synonymy; VERHOEFF, t. c. p. 500.
- Allotiphloiulus* n. subgen. of *Typhloiulus* for *Mesoiulus vulnerarius* Berl.; VERHOEFF, t. c. p. 504.

- Blaniulus serrula*, Basses-Alpes, p. 1, figg. 76-78; BRÖLEMANN, Feuille Natural. Ann. 35 (iv), n. sp.
- B. venustus*, damages to potatoes; CARPENTER, Econ. P. Dublin (1) vi, p. 295.
- Cylindroiulus apenninorum albanensis* n. subsp.; VERHOEFF, Zool. Anz. xxix, p. 511.
- C. deubeli* Att. = *horvathi* Verh., *hyperopherus* Att. = *abaligetanus* Verh.; VERHOEFF, t. c. p. 512.
- C. londinensis* var. *finitimus* var. nov., Pyrénées, p. 3; RIBAUT, Bull. Soc. Sci. Toulouse 1905.
- C. londinensis* var. *psilopygus* = *J. psilopygus*, Pyrénées, p. 4; RIBAUT, t. c.
- C. perforatus* nom. nov. for *Julus occultus*; VERHOEFF, Zool. Anz. xxix, p. 501.
- C. tirolensis* Brölemann, remarks; VERHOEFF, t. c. p. 512.
- Julus (Cylindroiulus) allobrogicus*, subsp. *turinensis* n. subsp.; BRÖLEMANN, Feuille Natural. Ann. 35°, p. 6, figg. 81 & 82.
- J. (Cylindroiulus) limitaneus*, p. 6, figg. 4 & 5; BRÖLEMANN, Bull. Mus. Monaco, No. 23, n. sp.
- J. (Leptoiulus) silvicola umbratilis*, Pyrénées, p. 1, pl. i, figg. 1-4; RIBAUT, Bull. Soc. Sci. Toulouse 1905, n. subsp.
- J. psilopygus* = *J. luridus* var. *ædurus*, Pyrénées, p. 3; RIBAUT, t. c.
- J. rufifrons, unilineatus, terrestris*, p. 501, *varius* var. *flavipes, nemorensis, dalmaticus, ferreus, piceus, mediterraneus*, p. 502, *cavannæ*, p. 503, *dicentrus*, p. 510, remarks on descriptions and figg. of Berlese and synonymy; VERHOEFF, Zool. Anz. xxix.
- J. terrestris, longabo, conformis*, p. 497, *albipes*, p. 498, *bilineatus, nemorensis, ferrugineus, rufifrons, rutilans*, p. 499, *parallelus, fasciatus, serpentinus*, p. 500, remarks on figg. of C. L. Koch and synonymy; VERHOEFF, Zool. Anz. xxix.
- J. (Typhloiulus) sculterorum* n. sp.; BRÖLEMANN, Feuille Natural. Ann. 35, p. 5, figg. 79 & 80.
- Mesoiulus*, remarks; VERHOEFF, Zool. Anz. xxix, p. 504.
- Mesoporiulus* n. subgen. of *Pachyiulus*; VERHOEFF, t. c.
- Noporiulus pulchellus*, Santiago (Chile), p. 745; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi.
- Pachyiulus (Mesoporiulus) berlesei*, remarks; VERHOEFF, Zool. Anz. xxix, p. 505.
- P. (Typhlopachyiulus) siculus*, remarks; VERHOEFF, t. c.
- Trichoblaniulus hirsutus* subsp. *cavernicola*, Basses-Alpes, p. 1, figg. 74 & 75; BRÖLEMANN, Feuille Natural. Ann. 35° (iv), n. subsp.
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Sub-ordo CAMBALOIDEA.

- Dimerogonus chilensis*, Chile, p. 744; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi.
- Epinannolene bicornis*, Costa Rica, p. 356, pl. ix, fig. 16; BRÖLEMANN, Ann. Soc. ent. France lxxiv, n. sp.
- Julomorpha chilensis* n. sp.; SILVESTRI, Revist. chilena ix, p. 233 (= *Dimerogonus chilensis*).

Sub-ordo SPIROSTREPTOIDEA.

- Autostreptus* n. gen.; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi, p. 742.
- A. chilensis*, p. 742, pl. xxxv, fig. 23; SILVESTRI, t. c.

- Odontopyge detruncata*, p. 280, pl. vii, figg. 11-11d, *fasciata*, p. 282, pl. vii, fig. 10, Cabo S. Juan; CARL, Mem. Soc. Espan. i, n. spp.
- O. dilatata*, p. 201, figg. 1 & 2, *conani*, p. 203, figg. 3-5, pl. iv, figg. 1-5, *falemica*, Sénégal-Soudan, p. 206, figg. 6 & 7; BRÖLEMANN, Mem. Soc. zool. France xviii, n. spp.
- Spirostreptus*, p. 358; BRÖLEMANN, Ann. Soc. ent. France lxxiv.
- S. angustifrons* n. sp., Cabo S. Juan; CARL, Mem. Soc. Espan. i, p. 278, pl. vii, fig. 9.
- S. canaliculatus*, Cabo S. Juan; CARL, t. c. p. 280.
- S. lugubris* var. *sudanica*, p. 208, pl. iv, figg. 6 & 7, n. var., *contortus*, Sénégal-Soudan, p. 209, pl. v, figg. 8-12; BRÖLEMANN, Mem. Soc. zool. France xviii, n. sp.
- S. (Scaphiostreptus) confragosus*, Costa Rica, p. 367, fig. 7, pl. ix, fig. 20, pl. 10, fig. 21; BRÖLEMANN, Ann. Soc. ent. France lxxiv.
- S. (Scaphiostreptus) typotypyge*, p. 359, pl. ix, fig. 17, *omalopyge*, p. 365, pl. ix, fig. 19, Costa Rica; BRÖLEMANN, t. c. n. sp.
- S. (Scaphiostreptus) typotypyge palmensis*, Costa Rica, p. 362, fig. 6, pl. ix, fig. 18; BRÖLEMANN, t. c. n. subsp.
- Thrinaculus lavicollis*, Cabo S. Juan, p. 284; CARL, Mem. Soc. Espan. i.

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- Rhinocricus (Eurhinocricus) biolleyi*, Costa Rica, p. 371, pl. x, fig. 22; BRÖLEMANN, Ann. Soc. ent. France lxxiv.
- R. (s.s.) nodonicollis*, p. 372, figg. 8 & 9, pl. x, figg. 23-25, *costaricensis*, Costa Rica, p. 375, pl. x, figg. 26-28; BRÖLEMANN, t. c. n. spp.
- R. (s.s.) oberus rubicundus*, Costa Rica, p. 376; BRÖLEMANN, t. c. n. var.
- Spirobolus simulans*, Cabo S. Juan, p. 277, pl. vii, figg. 8 & 8a; CARL, Mem. Soc. Espan. i, n. sp.

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- Phylogeny of Prototracheata, CARPENTER (2), and HANDLIRSCH (3).
- Buccal pits of *Peripatus*, HEWITT (4).
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- Central-America, *Peripatus*, BOUVIER.
- Ecuador, *Peripatus*, BOUVIER.
- Bolivia, *Peripatus*, BOUVIER.
- Venezuela, *Peripatus*, BOUVIER.
- Guyana, *Peripatus*, BOUVIER.
- Brazil, *Peripatus*, BOUVIER.
- Jamaica, S. Vincente, Trinidad, S. Thomas, Dominica, Antigua, *Peripatus*, BOUVIER.
- Congo, *Peripatus*, BOUVIER.
- Sumatra, *Eoperipatus*, BOUVIER.
- Malacca, *Eoperipatus*, BOUVIER.

IV. SYSTEMATIC INDEX.

- Eoperipatus*; BOUVIER, Ann. Sci. nat. (n. s.) ii, p. 350.
- E. sumatranus*, Sumatra, p. 353, *weldoni*, Malacca, p. 357, pl. ii, fig. 10, pl. x, fig. 93, pl. xi, figg. 94 & 95, text-figg. 34, 132, 134-137, *acarai*, Malacca, p. 369, pl. x, figg. 90-92, text-figg. 133 & 138-140; BOUVIER, t. c.
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- Peripates andicoles*, characters and analytical key to the species, pp. 76-78; BOUVIER, Ann. Sci. nat. (n. s.) ii, p. 350.
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- P. balfouri* and *novæ zelandiæ*, buccal pits; HEWITT, Mem. Manchester Soc. 1, pp. 1-8. figg. 1 & 2 of pl.

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By D. SHARP.

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(f) NEUROPTERA s. l. (incl. THYSANOPTERA).

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(h) ORTHOPTERA.

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INTRODUCTION.

THE number of titles this year is 1669, contrasting with 1549 last year.

KELLOGG's Introduction to North American entomology (834) is the only work of very wide scope we have to notice this year. BLANCHARD's work (124) on mosquitoes is intended specially for those who are not general entomologists, and will be found very useful by medical officers and others who have to do with *Culicidae*.

In the monograph of *Heliconiida* by STICHEL & RIFFARTH (1452) a most complicated nomenclature is introduced; the species are arranged in Sections and Cohorts, each one of which has a name. As the name has a plural termination we may presume that it cannot be considered as a subgenus and we have therefore not specially recorded these terms, they being merely substitutes—and it would appear of a superfluous nature—for the numerals and letters ordinarily used in the arrangement of species. Besides this a trinomial or a quadrinomial nomenclature is used for each of the species.

The second part of the late Prof. PACKARD's Bombycine moths (1131) calls for special notice: though ostensibly devoted to the *Ceratocampina*, it includes some introductory chapters containing much matter of great general interest; the wealth of illustration gives an additional charm to the work.

The first Volume of the butterflies of the Fauna of British India has appeared and is highly spoken of; BINGHAM (119). Another Volume of the British Museum Catalogue of *Lepidoptera* has appeared; HAMFSON (715). ALDRICH's catalogue of N. American *Diptera* (14) and BECKER & BEZZI's catalogue of Palaearctic flies are very valuable. LEWIS' catalogue of *Histerida* (951) shows that the described species have more than doubled in number since 1868, the date of the corresponding Volume of the Munich catalogue of *Coleoptera*.

M. THÉRY's work on Madagascar Buprestidæ describes many new species, and includes a discussion on the origin of the fauna of Madagascar. ENDERLEIN's (497) revision of two divisions of *Psocida* is another good contribution; and JOHANNSEN gives us an important work on N. American *Chironomida* (820). ESCHERICH's study of *Lepismatida* shows the extraordinary development of knowledge that has occurred in the past 30 years. LASS's paper on the flea (818) is of more general interest than its title would lead one to expect; besides its anatomical interest it also deals with metamorphosis and habits.

VERHOEFF (1539) has given us an important paper on the morphology of the head, based on a study of the lower orders.

Voss's memoir (1555) on the thorax of *Gryllus* contains much matter of morphological importance concisely stated: it is lengthy but it touches on many points. He has a good phylogenetic table of the winged Insects: and promises a paper in which development is to be dealt with.

In anatomy HOFFMANN's study (753) of the mouth-parts of *Tomocerus*, and KULAGIN's (901) of *Culicida* are each valuable. The second of these memoirs is accompanied by some very thoughtful considerations as to a great polyphylyism in Insects. WANDOLLECK (1565) contributes a study of the abdomen of the ♀ in *Coleoptera*; although not based on a very large number of examples, it is in other respects of considerable value. We have a summary of the structure and function of Malpighian tubes from VENEZIANI, together with new observations and elucidations (1536). SCOTT

given (1371) a very interesting sketch of the tracheal system, including the anal structures, of a developing Libellulid dragon fly.

Of two papers on the sense organs, the one by RÖHLER (1288) deals with the subject in general, and contains much interesting matter, while that by SEILER (1375) discusses the Ocelli of *Ephemerida*. Both touch also on the question of function, though rather lightly. PHILLIPPS contributes a valuable paper on the compound eye (1164). POPOVICI-BAZNOȘANU (1211) has studied the structure of the dorsal vessel in *Chironomus* and a few other insects. RÄDL (1230) has an interesting discussion of the sense of hearing.

FAHRE's new volume (533) is chiefly devoted to spiders, but it includes two short chapters on *Coccida*. BUTTEL-REEPEN has an article on Insect-miology (224). We owe to DOFLEIN a most interesting account of the proceedings of *Ecophylla smaragdina*, the weaver-ant (436), while HUBER's account (791) of the mode of establishing a colony in the case of the leaf-cutting ants is quite fascinating. The origin of slavery in ants is discussed at length by WHEELER (1619) and WARMANN (1579, 1580). FERTON gives us some valuable notes on the habits of *Hymenoptera*; the case of parasitism in a *Pompilus* being of special interest (558). Some very interesting information as to the Natural History of a Singhalese species of *Termitida* is given by DOFLEIN (437). Dr GOELDI has published a very considerable contribution to the Natural History of Brazilian mosquitoes (672).

GROSS (699) has written on the ovaries of *Mallophaga* and *Anoplura*, and finds them to be extremely similar. He discusses the classification of these groups, and concludes that there is but little ground for placing *Anoplura* with *Hemiptera*.

BORDAGE has produced a very interesting treatise on autotomy and regeneration (135), and THIENEMANN (1491) makes an important contribution by his sketch of the biology of the pupa of *Trichoptera*, and accompanies it with a very complete bibliographic list.

SILVESTRI gives a preliminary account (1393) of an extraordinary case of germinogony, accompanied by larval dimorphism. HEYMONS (745) gives a brief sketch of the peculiar embryology of *Nachilis*. Miss FIELDS (559) contributes a valuable set of observations on the progeny of virgin—chiefly worker—ants.

Miss STEVENS (1449) gives us a number of interesting observations as to the very earliest processes of ontogeny in these extraordinary creatures *Apidae*.

In Variation we have an important memoir from ENTENMAN on the colour and pattern of *Adiast* (518). PICTET has given the results of his experiments as to the variation produced by changing the food of Lepidopterous larvae (1196). He experimented with 4 or 5000 individuals of 21 species of Swiss *Lepidoptera*. The part of his work relating to humanity is less conclusive.

The memoir by PETERSEY (1155) on the sexual organs, requires careful consideration from all Lepidopterists, as he is far from considering previous work exhaustive, and makes various suggestions having a very wide bearing. He also has a paper (1156) to exemplify his views as to the origin of species by physiological isolation, by the case of *Heliothis adans*; the variation of the male genitalia being illustrated by photographs.

JOURNAN's work (822) should be read in conjunction with PETERSEY's; he discusses geographical and morphological variation. The two works emphasize the necessity of a thorough study of the variation of sexual organs, and writers apparently taking it for granted that disparity in the copulatory organs prevents copulation. A hypothesis which is by no means established, though the assumption is far from new.

The most remarkable of the ENTOMOLOGICAL work of the year, is the series produced as Report of the Hawaiian Sugar Planters' Association by

PERKINS (1149-1154) and others. They include a great deal of matter of interest to the Naturalist as well as to the Economist. Mr WASHBURN's (1577) plan of devoting an annual Economic report to the insects of one Order will prove of value if completed, as it would soon provide a Manual of Economic entomology for the State, in place of the desultory repetitions that now abound in this department of Entomology. This system he says was inaugurated by his predecessor. The part published this year is a good brief guide to the study of *Diptera*.

SCHUCHERT & BUCKMAN (1353) have promulgated a system of nomenclature of types, which is unnecessarily complex, owing to their having confounded three categories, under the term type.

HANDLIRSCH has given us an interesting sketch of BRAUER's scientific career (724).

The Recorder has nowhere met with a new entomological periodical in Bohemian called *Casopis České Společnosti entomologické*. An account of its contents for the year 1905 is given in *Zool. Zentrbl.* 1905, p. 809.

The question of "publication" is one that calls for serious consideration. Does the printing and selling of two or three copies constitute of itself publication? And if not, where is the line to be drawn between this and an authoritative list of recognised channels of communication between Zoologists? The number of doubtful publications is now so great that every Recorder would be glad to know that they are not to be encouraged, as he finds it impossible to get a sight of many such.

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2. —. Description d'un *Bythinus* nouveau de France. T. c. p. 42. [*Coleoptera*.]
3. —. Descriptions de trois *Buprestides* méditerranéens nouveaux. T. c. pp. 207, 208. [*Coleoptera*.]
4. —. Description d'un nouveau *Coléoptère* aveugle de France. T. c. p. 208.
5. —. Notes biologiques sur *Siettitia buloetensis*. T. c. pp. 225-227. [*Coleoptera*.]
6. ADAMS, C. F. On the North American species of *Oecinia*. Ent. News Philad. xvi, pp. 108-111. [*Diptera*.]
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 Mosquitoes and disease in Brazil, GOELDI (672).
Stegomyia and yellow fever, GOELDI (673).
Stegomyia fasciata in N. America, HOWARD (787).
 Transmission of infection by heredity in *Stegomyia*, MARCHOUX & SIMOND (1007).
 Habits of *Anopheles* at Aden, PATTON (1140).
 Mosquito destruction, HODDER (752).
 Ross (1293), mosquitoes, preventive instructions.—Reducing mosquitoes, Ross (1291, 1292).
 Mosquito extermination, SMITH (1420).
 Mosquito-control, UNDERWOOD (1521).
 Destruction of mosquito larvæ, GALLI-VALERIO (636).

FAUNISTIC: GEOGRAPHICAL DISTRIBUTION.

N.B.—The numbers in brackets refer to "Titles"; by their means it is intended to give a reference to every memoir containing a notice affecting the entomological fauna of each of the twelve regions here adopted. But synonymical notes and changes of systematic position are not included in these references. In addition to giving references to titles of works that actually add to the faunistic record of a region, there are also comprised references to a large number of works on local faune, or "stations." In such cases the reference is, as a rule, made direct to the original work, not to our title-numbers, many of these local faunistic notes not being included at all in our list of titles.

In this Faunistic division varieties are not included: neither is a new genus (unless it is also a n. sp.), nor synonymy. When no subordinate locality is mentioned in connection with a memoir, it is to be understood that it refers to several divisions of the region indicated by the immediate subheading.

GENERAL.

- Importance of distribution, SPEISER (1431).
 Insects as evidence of geographical and climatic changes, VACHAL (1525).
 Distribution of *Lepismatida*, ESCHERICH (525).
 Geographical distribution of *Trichoptera*, ULMER (1520).
 Distribution of *Coprophagous Lamellicorns*, KOLBE (878).
 No locality. *Col.*, see *Passalidæ*, *Gonatas cetioides*.

1. ARCTIC AND ANTARCTIC.

HAMPSON (715); Arctic America, Novaya Zembla, *Hadenina* n. spp.

2. INSULAR (including NEW ZEALAND).

- Azores. *Lepidoptera*, *Noctuidæ*, 2 spp. n., *Geometr.*, 2 spp. n., *Scoparia*, 4 spp. n., WARREN (1575). *Orthoptera*, BOLIVAR (131), *Xiphidium* n. sp.
 Madeira: *Coleoptera*, FAUVEL (548), *Dromius*, 2 spp. n.; REITTER (1244) n. g. *Tenebrionida*. *Hymenoptera*, *Diapriæ* n. sp., KIEFFER (842).
Lepidoptera, HAMPSON (715), *Hadenina* n. sp.; *Tephroclystia* sp. n., WARREN (1575).
 Canary Ids.: *Coleoptera*, SHARP (1385), *Crioccephalus pinetorum*.
Lepidoptera, HAMPSON (716) n. g. *Arctiida*. *Orthoptera*, BURR (219), *Forficula* n. sp.
 St Helena: *Lepidoptera*, HAMPSON (715), *Hadenina* n. sp.

- Galápagos: *Lepidoptera*, *Sericosema* n. sp., WARREN (1572).
 Liou-Kiou Ids.: *Coleoptera*, BOILEAU (126) *Nigidius* n. sp.
 Bonin Ids.: *Homoptera*, DISTANT (422), *Diceropyga* n. sp.
 Hawaiian Ids.: *Hymenoptera*, PERKINS (1154), *Polynema* n. sp.
Lepidoptera, HAMPSON (715), *Hadenina* n. sp. *Diptera*, PERKINS (1153),
Pipunculus, 5 spp. *Orthoptera*, SWEZEY (1458), *Xiphidium* n. sp.
 Marianne Ids.: *Hemiptera*, SCHOOTEDEN (1340), *Coleotichus* sp. n.
 Caroline Ids.: *Hymenoptera*, FRIESE (602), *Megachile* sp. n.
 Louisiade Arch.: *Coleoptera*, ARROW (30), *Rhyparus* sp. n.; LEWIS (954),
Platysoma sp. n.
 Woodlark Id., S. E. Island: *Coleoptera*, HELLER (736), *Pantorhytes*,
 2 spp. n. *Lepidoptera*, HAMPSON (717), *Gyrtona* sp. n.; SWINHOE (1461),
Pidorus n. sp.
 Solomon Ids.: *Lepidoptera*, HAMPSON (716), *Asura*, 3 spp. n.; HAMPSON
 (717), *Stictoptera* n. sp., *Cacyparis* n. sp.; *Sphingida*, ROTHSCCHILD (1304),
Macroglossum sp. n.; *Zethes* sp. n., SWINHOE (1459); SWINHOE (1460),
Euchromia, 3 spp. n.; SWINHOE (1461), *Blenina* n. sp.; WARREN (1569),
Thyrididae, *Epiplemidæ*, *Geometridæ*, 10 spp. n.; *Geometridæ*, 18 spp. n.,
Epiplema, 7 spp. n., *Banisia* and *Strigina* sp. n., WARREN (1574).
Hemiptera, BREDDIN (183), *Calliphara* n. sp. *Homoptera*, DISTANT
 (429), *Diceropyga* n. sp.
 New Pomerania: *Lepidoptera*, SWINHOE (1460), *Euchromia* sp. n.
 New Britain: *Coleoptera*, LEWIS (953), *Plænius* 2 spp. n. New Britain
 and Lifu: *Hemiptera*, KIRKALDY (856), 20 n. spp.
 Bismarck Arch.: SZÉPLIGETI (1466), *Iphiaulax* sp. n. *Hemiptera*,
Tibicen n. sp., KUHLGATZ (899). *Homoptera*, RÜBSAAMEN (1315), Galls,
Psyllidæ, *Aphidæ*, *Coccidæ* n. sp. *Pyrgomorphidæ*, BOLÍVAR (130),
Desmoptera sp. n.
 Fiji Ids.: *Coleoptera*, PIC (1178), *Anthicus* n. sp. *Lepidoptera*,
 BETHUNE-BAKER (108), *Sphingidæ*, *Hepialidæ*, *Dasychira*, *Argyrothripa*,
Geometridæ, *Locastra* spp. n.; HAMPSON (717), *Barasa* n. sp., *Carea* n. sp.
 Loyalty Ids.: *Coleoptera*, PIC (1176), *Hylophilus* n. sp.
 New Caledonia: *Coleoptera*, BOILEAU (126), *Syndes* n. sp.; FAUVEL
 (550A). *Orthoptera*, BOLÍVAR (130), *Orthacrinæ*, 2 spp. n.
 New Zealand: *Insecta*, HUDSON (792), Mount Holdsworth, list chiefly
Lep. Coleoptera, BROWN (194), *Metaglymma*, 2 spp. n., *Cilibe* n. sp.,
Curculion. Auckland Ids. n. g. *Hymenoptera*, FOREL (590), *Formicidæ*,
 revised list, 19 spp. *Lepidoptera*, BULLER (217), brief list, 1 novelty;
 HAMPSON (715), *Hadenina* n. spp.; HAMPSON (716), *Morrisonia*, 2
 spp. n.; HUDSON (793), *Charocampa celerio*; HUDSON (794), 5 spp. n.;
 MEYRICK (1041), many spp. n.; PHILPOTT (1167), *Melanchra*, *Leucania*,
Xanthorhoe. *Diptera*, BROWN (195), *Dacus* n. sp. *Coccidæ*, LEONARDI
 (936), *Mytilaspis* n. sp.
 Falkland Ids.: *Diptera*, ENDERLEIN (505), *Limnobiidæ* n. g. *Psocidæ*,
 ENDERLEIN (507), *Philotarsus* n. sp.
 Crozet Ids.: *Coleoptera*, ENDERLEIN (503), *Carabidæ*, 2 n. genn.,
Trechini. Crozet Ids. and Kerguelen: *Lepidoptera*, ENDERLEIN (506),
Tineinæ g. n., 2 spp. n.

3. PALÆARCTIC REGION.

- (a.) Collective: i.e. papers referring to more than one of
 the following sub-divisions, c—h.

China, with the exception of Mongolia, is included in "Asia," as is also Japan.

Coleoptera. Statistics of Koltze's coll. of palæarctic *Coleoptera*, Deutsche
 ent. Zeitschr. 1906, pp. 55, 56. Pp. 35–45 München Kol. Zeitschr. iii

give localities for a very large number of species European *Coleoptera*, by numerous authors. BERNHAUER (102), *Staphylinidae*, 18 spp. n. DU BUSSON (226), Manchuria, *Agriotes* n. sp. DESBROCHERS (399), *Magdalis*, revision. LAPOUGE (913), North Mongolia, *Carabus*, short list. LUZE (993), *Lathrimæum*, 4 spp. n. LUZE (994), *Acidota*, 3 spp. n. PETRI (1157), *Lixus*, table, 4 spp. n. PIC (1181), *Cerambycidae* n. spp. PIC (1173), Persia, *Polyarthron*, *Leptura*, *Dorcadion* sp. n. PIC (1184), *Limnichus*, *Acmæodera*, *Stenosis*, *Abdera*, *Galerucella* sp. n., *Curculionidae*, 5 spp. n. PIC (1187), numerous localities, various families, 21 spp. n. PIC (1191), Algeria, *Prionolixus* sp. n., W. Asia, *Desimia*, *Rhagonycha*, *Hymenalia*, *Tychius* sp. n. PIC (1195), Greece, Palestine, Turkestan, *Eriotomus*, *Dictyoptera*, *Rhagonycha*, *Anthicus*, *Cyclomias*, *Collimus* sp. n. REITTER (1244), *Tenebrionidae* n. gen., n. spp. REITTER (1245), *Elateridae*, tables, *Athouina*, 36 spp. n. REITTER (1248), *Epicauta*, table. REITTER (1249), 8 spp. n. REITTER (1254), 10 spp. n. REITTER (1256), *Bothynoderes*, 4 spp. n. SCHILSKY (1331), *Bruchidae*, 4 spp. n. WAGNER (1556), S.E. Eur. and Caucasus, *Apion*, 2 spp. n. ZAITZEV (1649), East Siberia and Turkestan, *Hydroporus*, 2 spp. n. ZAITZEV (1650), Russian Empire, *Halipilidae* and *Dytiscidae*, localities.

Hymenoptera. FRIESE (611), Russian Empire, *Bombus*, 7 spp. n., *Psithyrus* sp. n. KIEFFER (840), *Proctotrypida*, general work, many n. spp. KOHL (874), Mediterranean and Irkutsk, *Crabro*, 5 spp. n. SZÉPLIGETI (1467), *Ichneumonidae*, 14 spp. n. SZÉPLIGETI (1465), Spain, Hungary, *Ophioninae*, 2 spp. n.

Lepidoptera. HAMPSON (715), catalogue of *Hadeninae*, n. spp. PÜNGELER (1221), Centr. Asia, *Pseudohadena*, 2 spp. n., *Sesia*, 2 spp. n., Palestine, *Metopoceras* sp. n. Vladimar Bay, *Rhopalocera*, LANG, pp. 122-124, Entomologist 1905.

Diptera. BECKER & BEZZI (90), catalogue vol. iv. HERMANN (740), *Asilidae*, 11 spp. n. Pekin, *Systropus*, see Asia.

Hemiptera. HORVÁTH (774), Hungary and Egypt, *Berytidae*, 2 spp. n. HORVÁTH (775), *Ommatidiotus*, 4 spp. n. HORVÁTH (777), *Tingitidae*, 17 spp. n.

Trichoptera. ULMER (1517), Centr. Asia and Amurland, 5 spp. n.

Thysanura. ESCHERICH (525), Sevastopol, Athens, Egypt, Tunisia, Persia, Transcaspian, *Lepismatida* n. spp.

(b.) *Europe*, collectively.

Insecta. Introduced insects in Europe, their distribution, DICKEL (415).

Coleoptera. REITTER (1250), *Leistus*, 3 spp. n. REITTER (1255), *Bosnia Anophthalmus*, Caucasus *Rhinosisimus*, Herzegowina *Rhizophagus* sp. n.

Hymenoptera. KONOW (883), *Tenthredinidae*, 3 spp. n. MAYR (1017), France and Austria, *Decatoma*, 2 spp. n., Germany, *Perilampus* sp. n. SCHMIEDEKNECHT (1334), *Ichneumonidae*, 40 spp. n.

Diptera. KRAMER (888), *Sarcophaga*, 2 spp. n.

Orthoptera. Synopsis of *Orth.* of W. Europe, continuation, BUER, Ent. Rec. xvii, pp. 10 etc.

(c.) *British Islands*.

THE FAUNA AS A WHOLE

Coleoptera. *Triplax bicolor*, novelty, BAGNALL (52). *Malachius spinosus*, novelty, CHAMPION, Ent. Mag. 1905, p. 66: *M. spinosus*, novelty corrected, t. c. p. 88 to *M. vulneratus* Ab.; *M. vulneratus* in 1859, WATERHOUSE, p. 234, Ent. Mag. 1905. *Oxygoda sericea*, novelty,

DONISTHORPE, Ent. Rec. xvii, 67. *Dinarda hagense*, novelty, DONISTHORPE, p. 181, Ent. Rec. xvii. *Hadrotoma nigripes*, novelty, ELLIS (490). *Dacne fowleri* sp. n., *Lamophlaeus monilis*, *Melanophthalma distinguenda*, novelties, JOY (824). *Quedius variabilis*, novelty, NEWBERRY (1088). *Criocephalus rusticus*, novelty, D. SHARP (1385). *Tetropium*, 2 spp. n., D. SHARP (1386). *Tetropium* [crawshayi] at Leighton Buzzard, CRAWSHAY, p. 223, Ent. Mag. 1905. *Amara anthobia*, novelty, W. E. SHARP (1389), and CRAWSHAY, Ent. Mag. 1905, pp. 159-161. *Silvanus mercator*, novelty, TOMLIN, p. 37, Ent. Mag. 1905; NEWBERRY, t. c. p. 69. *Col.* of the Eastern Counties, table, MORLEY (1068). *Omphalus betulae* imported, JANSON, p. xxxi, P. ent. Soc. London 1905. Retrospect of a Coleopterist for 1904, Ent. Rec. xvii, pp. 29-34. *Coleoptera* in 1905, DONISTHORPE, Ent. Rec. xvii, pp. 291-293. Scrutiny of doubtful forms, NEWBERRY, pp. 18-20, Ent. Rec. xvii; BEARE & DONISTHORPE, t. c. pp. 20-22, & 42-45. *Myrmecophilous Col.* in 1905, DONISTHORPE, p. 271, Ent. Rec. xvii. *Triplax*, tabulated, BEARE, pp. 176-178, Ent. Rec. 1905. *Phymatodes lividus* at Reading, BOUSKELL, p. 295, Ent. Rec. xvii. *Neoclytus erythrocephalus* in Lancashire, W. E. SHARP, p. 92, Ent. Mag. 1905. *Orchestes sparsus*, as British, NEWBERRY, p. 116, Ent. Mag. 1905. *Anisotoma oblonga*, in Britain, CHAMPION, p. 198, Ent. Mag. 1905. *Baris* T-album and *pilistriata* ? two species, CHAMPION, p. 224, Ent. Mag. 1905. *Elater nigerrimus* vice *ethiops*, CHAMPION, p. 210, Ent. Mag. 1905.

Hymenoptera. KIEFFER (840), *Proctotrypidae* numerous n. spp. *Tenthredinidae*, 3 novelties, MORICE (1065). *Ichneumonidae*, novelties, n. spp., MORLEY (1067).

Lepidoptera. *Agdistidae* and *Alucitidae*, list of British, TUTT (1512). Practical hints for the field, TUTT (1514). *Rhopalocera*, General work, TUTT (1510). General work, *Tortricidae*, BARRETT (78). *Tortrix pronubana*, novelty, FLETCHER (579). *Argyresthia illuminatella*, novelty, MEYRICK, p. 226, Ent. Mag. 1905. *Arctornis* L-nigrum at Chelmsford, PROUT, p. 73, Ent. Rec. xvii.

Diptera. VERRALL's tables continued, novelties, n. spp., Ent. Mag. 1905, pp. 50 etc. Retrospect of a Dipterist for 1904, COLLIN, pp. 55, 56, Ent. Rec. xvii. *Erigone*, two novelties, AUSTEN (47A). *Culex waterhousei* n. sp., WATERHOUSE (1591). *Callimya elegantula*, *Agathomyia boreella*, *Homalomyia difficilis*, *Palloptera laetabilis*, *Thryptocera frontalis*, novelties, WOOD, Ent. Mag. xli, p. 5. *Tachinidae*, 9 novelties, and critical notes, WAINWRIGHT (1561). *Micropalpus* and other *Tachinidae*, WAINWRIGHT, pp. 199-207, Ent. Mag. 1905. *Atrichosema aceris* n. sp., KIEFFER (844). *Hammerschmidtia ferruginea*, novelty, YERBURY, p. xlvii, P. ent. Soc. London 1905. *Anthomyia signata* in Scotland, SPEISER, p. 464, Zeitschr. Insekt. i. GRIMSHAW, *Hydrotæa* (694). *Ulidia nigripennis*, novelty, WESCHÉ, p. 227, Ent. Mag. 1905.

Aphaniptera. ROTHSCHILD, *Ceratophyllus* n. sp. (1303). *Pulus cheopis*, novelty, ROTHSCHILD & GILES, p. 139, Ent. Mag. 1905.

Hemiptera. British waterbugs, contd., KIRKALDY, pp. 173—, pl. ii, Entomologist 1905. *Siphonophora* n. sp., THEOBALD (1485).

Odonata. Dragonfly season of 1904, LUCAS, pp. 178, 179, Entomologist 1905.

Orthoptera. List of British *Orthoptera*, LUCAS, pp. 21, 22, P. South London Ent. Soc. 1905. *Orthoptera* in 1904, LUCAS, pp. 266-268, Entomologist 1905. *Leucophaea surinamensis*, in Essex, Liverpool etc., HORRELL, p. 92, Entomologist 1905: SOPP, t. c. p. 111. *Phaneroptera quadripunctata* near *Chester*, GAHAN, p. li, P. ent. Soc. London 1905. *Acridium ægyptium*, LATTER, p. 47, Ent. Rec. xvii.

LOCAL LISTS.

The arrangement adopted in each Order is roughly, Channel Islands, England from South to North and from West to East, Wales, Scotland, Ireland.

Insecta. Guernsey and Alderney, LUFF, pp. 318-322, Rep. Guernsey Soc. 1904. Herm, LUFF (1987), Jethon, LUFF (1988). Severn Valley, *Col.* and *Lep.*, PORTS, pp. 39, 40, Rec. Caradoc Club, No. xiv. Marlborough, Catalogue of the district *Hymen.*, *Hemipt.*, *Neur.*, *Orthopt.*, Rep. Marlborough Soc. liii, pp. 86-98. Marlborough, MEYRICK, novelties etc. most of the Orders, Rep. Marlborough Soc. liii, pp. 67-81. Staffordshire, novelties, BOSTOCK, pp. 69-71, Rep. North Staffordsh. Club xxxix. EVANS, Upper Elf loch, Edinburgh (530). South Kerry, BOUSKELL, Tr. Leicester Soc. ix, pp. 39-47. Rosses Point, Sligo, JOHNSON, pp. 252-255, Irish Natural. 1905.

Coleoptera. Sidmouth, *Strangalia aurulenta*, ATTLEE, p. 69, Ent. Mag. 1905. Isle of Wight, DONISTHORPE, pp. 68-70, Ent. Rec. xvii. New Forest, short list, ANDREWS, pp. 71, 72, Ent. Mag. 1905. New Forest, *Dytiscide*, W. E. SHARP, p. 161, Entomologist 1905. New Forest, *Elater* spp. etc., WHITAKER, p. 235, Ent. Mag. 1905. New Forest, *Elater sanguinolentus*, WOOD, p. 280, Ent. Mag. 1905. New Forest, *Lymexylon*, CHAMPION, p. 179, Ent. Mag. 1905. New Forest, list, *Tropideres sepicola*, WEST, Ent. Rec. xvii, p. 68. New Forest, *Orchestes sparsus*, DONISTHORPE, Ent. Mag. 1905, p. 20. Sussex, *Quedius nigrocaeruleus*, DOLLMAN, Ent. Rec. xvii, p. 17. Hastings, BOUSKELL, pp. 82, 83, Tr. Leicester Soc. ix. Ditchling, DOLLMAN, Ent. Rec. xvii, p. 183. Sheppey, *Lamosthenes* etc., WALKER, p. 234, Ent. Mag. 1905. Chatham, *Amara anthobia*, BEARE, p. 117, Ent. Mag. 1905. Woolwich, *Gnorimus nobilis*, BEDWELL, p. 159, Ent. Mag. 1905. Surrey, *Pselaphus dresdensis*, BRYANT, p. 159, Ent. Mag. 1905. S. W. Surrey, *Carabus intricatus* etc., CROFT, p. 93, Entomologist 1905. S. W. Surrey, CROFT, p. 26, Entomologist 1905. Woking, *Acrognathus*, CHAMPION, p. 161, Ent. Mag. 1905. Esher, *Tetropium*, BRYANT, p. 69, Ent. Mag. 1905. Ealing, *Deleaster*, DOLLMAN, p. 156, Ent. Rec. xvii. Enfield, *Hylotropus*, POOL, p. 133, Ent. Rec. xvii. Enfield, *Symbiotes*, DONISTHORPE, p. 18, Ent. Rec. xvii. Hainault Forest, *Gnorimus nobilis*, COLE, p. 73, Essex Natural. xiv. Hertfordshire novelties, GIBBS, p. 137, Entomologist 1905. Hertfordshire, *Col.* new to the fauna, GIBBS, p. 156, Tr. Hertfordshire Soc. xii:—*Col.* observed in 1904, ELLIMAN, t. c. p. 168. Tring, *Apion annulipes* etc., ELLIMAN, p. 20, Ent. Mag. 1905. Leighton Buzzard, *Harpalus discoideus*, *Meloeccus paradoxus*, CRAWSHAY, pp. 45, 46, Ent. Mag. 1905. Berkshire, JOY, p. 209, Ent. Mag. 1905. Reading, *H. honestus*, HOLLAND, p. 257, Ent. Mag. 1905. Streatley, Berks, *Rhizotropus ochraceus*, JOY, p. 16, Ent. Mag. 1905. Oxford, WALKER, pp. 180-183, Ent. Mag. 1905. Oxford, *A. astragali*, HOLLAND, p. 257, Ent. Mag. 1905. Oxford, *Medon castaneus*, WALKER, p. 138, Ent. Mag. 1905. Warwick, Victoria history, ELLIS, cf. Ent. Rec. xvii, pp. 165, 166. Upton-on-Sovere, *Ceuth. viduatus*, TOMLIN, p. 235, Ent. Mag. 1905. Herefordshire, *Gnorimus nobilis*, TOMLIN, p. 235, Ent. Mag. 1905. Colchester, *Tropideres sepicola*, HARWOOD, p. 262, Ent. Mag. 1905. Market Bosworth, *Tetropium* etc., DONISTHORPE, p. 18, Ent. Rec. xvii. Leicester, BARROW, pp. 81, 82, Tr. Leicester Soc. ix. Suffolk, *Apion brunnipes*, BEDWELL, p. 256, Ent. Mag. 1905. Norfolk: on *Bugous lutosus*, Gyll., in Norfolk with some collateral matter, EDWARDS, pp. 102-106, and MORLEY, pp. 106, 107, Tr. Norfolk Soc. viii. Norfolk Broads, aquatic *Col.* collections, BROWNE (196). Sherwood, *Q. xanthopus*, TAYLOR, p. 80, Ent. Mag. 1905. Peterborough, *Aphyra*, CRUTTWELL, p. 209, Ent. Mag. 1905. Skegness, Lincs., *Anisotoma furva*, MORSE, p. 93, Ent. Mag. 1905. North Staffordshire, preliminary list,

JAHN, pp. 73-90, Rep. North Staffordsh. Club xxxix. Southport, *Amara anthobia*, TAYLOR, p. 257, Ent. Mag. 1905. Isle of Man, *Aphodius* list, BAILEY, pp. 90, 91, Ent. Mag. 1905. Isle of Man, *Meligethes obscurus*, BAILEY, p. 21, Ent. Mag. 1905. Isle of Man, *Rhopalomyia*, RAILLY, pp. 207-209, Ent. Mag. Isle of Man, novelties, TOMLIN, pp. 261-264, Ent. Mag. 1905. Isle of Man, TOMLIN, pp. 45-49, Rep. 20, Lancash. Chesh. ent. Soc. Teesdale, *Leptusa analis* etc., BAGNALL, p. 268, Ent. Mag. 1905. Derwent Valley, *Nitidulidae*, BAGNALL, p. 162, Ent. Mag. 1905. Sunderland, *Chrysom. hobsoni*, BAGNALL, p. 70, Ent. Rec. xvii. Durham, *Lathridius angulatus*, BAGNALL, p. 157, Ent. Rec. xvii. Durham, *Rhizophagus ceruleipennis*, BAGNALL, p. 156, Ent. Rec. xvii. Northumberland and Durham additions, BAGNALL (51). Cumberland, novelties, DAY, pp. 16, 17, Ent. Rec. xvii. Penrith, *Phytobius muricatus*, DAY, p. 20, Ent. Mag. 1905. N. Wales, *Atemeles* and *Claviger*, TOMLIN, p. 20, Ent. Mag. 1905. Peebles, BLACK, Ent. Rec. xvii, p. 70. Rannoch, *Trichius*, BEARE, pp. 18, 19, Ent. Mag. 1905. Argyllshire, *Cionus tuberculosus*, GRIMSHAW, Ann. Scott. Nat. Hist. 1905, p. 56. Edinburgh, *Grammoptera*, PATTERSON, Ann. Scott. Nat. Hist. 1905, p. 145. Forres, *Gyrophena pulchella*, CHITTY, p. 92, Ent. Mag. 1905. Sutherland and Inverness-shires, CRUTWELL, pp. 209, 210, Ent. Mag. 1905. Flannan islds. (W. of Lewis), BEARE, p. 19, Ent. Mag. 1905. Flannan islds., BEARE (87). Lough Neagh and Portrush, list, BEARE, pp. 20, 21, Irish Natural. 1905.

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(g.) *Southern Europe and Mediterranean Basin* [see also (a.), (b.) and (f.) and for Caucasus and Transcaucasus (h.)].

Insecta. CHAMPION & CHAPMAN (300), Spain, *Col.*, *Lep.*, *Hemipt.*, lists. NAVÁS (1085), Spain, *Machilis*, *Lepismima*, *Chrysopa*, *Rhithrogena* n. sp. Annuar. Ac. Porto 1898-9, pp. 122-140, Catalogue of specimens in Coll. at Porto, *Hemiptera*, *Hymenoptera*: op. cit. 1899-1900, *Orthoptera* and various, pp. 107-122. FRIEDERICH (599), Riviera in spring. SILVESTRI (1400), Elba and Pianosa, *Lepism.*, *Leucotermes*, *Embia*. PANDIANI (1134), Val Aosta, 76 novelties.

Coleoptera. *Dendarus serripes*, *Olocrates planiusculus*, *Pachychile pedinoides*, *punctata*, *glabra*, are not European but N. African; VON HEYDEN, p. 154, Wien. ent. Zeit. xxiv. REITTER (1246), Spain, *Ablattaria* and *Trichobyrrhulus* sp. n. Escalera (523), Spain, *Anda*, revision, 17 spp. n. NOBRE (1103), Catalogue of Coll. at Porto. BEDEL (91), N. Africa, novelties, *Bradybutus* n. sp. DU BUYSSON (228), N. Africa, *Elateridae*, 3 spp. n. FAUVEL (549), N. Africa, *Staphylinidae*, 3 spp. n. BEDEL (92), Morocco, *Crypticus*, *Omophilus* sp. n. BOURGEOIS (156), Morocco, *Lycus* n. sp. ABELLÉ (3), Bucharest, La Granja, Algeria, *Buprestidae*, 3 spp. n. BOURGEOIS (154), Algeria, *Rhagonycha* n. sp. BUYSSON (227), Algeria, *Silesis* n. sp. CHABAUT (310), Algeria, *Tetropiopsis* n. sp. DEVILLE (410), Algeria, *Hydraena*, 3 spp. n. MOLLANDIN (1056), Algeria, *Copris* n. sp. PEYERIMHOFF (1160), Algeria, *Acidota*, *Cylindropsis* sp. n. PEYERIMHOFF (1161), Algeria, *Tychus*, *Catops* n. sp. PIC (1174), Algeria, *Dasycerus*, 2 spp. n. PIC (1178), Algeria, *Anthicus* sp. n. PIC (1189), Algeria, 12 spp. n., *Hydraena*, *Etmia*, *Malacoderm.*, *Curc.*, *Chrysom.* PIC (1190), Algeria, *Cebrio*, *Attalus*, *Sibiniu*, *Cathormiocerus*, *Trachypylæus* n. sp. PIC, Algeria, 3 spp., Akbès, *Amorphocephalus*, Bull. Soc. ent. France 1905, p. 280. DE CHAIGNON, Tunis brief list, Bull. Soc. Autun xvii, pp. 207-209. MjöBERG (1048), Egypt and White Nile, *Carabidae*, 6 spp. n. White Nile and Egypt, see Jägerskiöld exp. No. 10a, FAUVEL, *Staphylinidae*, p. 5, GROUVELLE, *Colydiidae*, *Cucujidae*, p. 5, BRENSKE etc., *Scarabæidae*, p. 6, *Buprestidae*, KERREMAN, p. 8, *Elateridae*, FLEUTIAUX, p. 9, SCHENKLING, *Cleridae*, p. 11, *Bostrychidae*, LESNE, p. 11, *Cantharidae*, AURIVILLIUS, p. 15, *Cerambycidae*, AURIVILLIUS, p. 17. MÜLLER (1078), Istria, 4 subsp. n. cavernicolous *Col.* BERTOLINI, Catalogo dei *Coleotteri* d'Italia, Siena, 1899-1904, 11,856 forms; cf. Riv. Col. ital. ii, pp. 104. CIAMPI (320), Rome, suppl. to Catalogue. FIORI (563), Rome (*Xenonychus rotundatus* n. sp.), but

- = *Saprinus conjungens*. FIORI (564), Italy, *Bembidion*, *Pterostichus*, *Amara*, *Acalles* n. sp. FIORI (565), Italy, *Haliphys* n. sp. FIORI (567), Italy, *Alophus* n. sp. FIORI (568), Italy, *Psilothris* n. sp. FIORI (569), Bologna, *Cybocephalus*, *Limoni* n. sp. FIORI (570), Italy, *Malthodes* n. sp. FLACH (574), Calabria, *Troglohyrnchus* n. sp. HOLDHAUS & WAGNER (754), Tuscany, *Bythinus*, *Pselaphus*, *Cephennium*, *Apion* n. spp. LUIGIONI (990), Italy, additions to Catalogue. PIC, Informazioni bibliografiche e note complimentari su diversi *Coleotteri* d'Italia, Riv. Col. ital. i, pp. 50-52. PORTA (1212), Italy, *Abax* and *Percus*, revision. PORTA (1213), Italy, *Atheta* n. sp. PORTA (1214), *Staphylinidae* of Italy, pt. 2. RAGUSA, Sicily, novelties, Natural. Sicil. xvii, pp. 288-292, and xviii, p. 24, pp. 69-72. VITALE (1554), Sicily, *Phyllobius*, *Microleptus*, *Myllus*, *Cathormiocerus*, *Larinus* n. sp. VITALE, Sicily, *Coccinellidae*, Natural. Sicil. xvii, pp. 193-200, 219-229. VITALE, Messina, Natural. Sicil. xvii, pp. 129, 165, and xviii, pp. 53-69, 73-86. VITALE, Messina, list continued, Boll. Natural. xxv, pp. 38-41, 74-77, 81, 82, 106-108. LE COMTE (932), Malta, *Cetonia* n. sp. REITTER (1257), Cyprus, Euboea, *Reichenbachia*, 2 spp. n. REITTER (1247), Cyprus, *Stenichneumon* n. sp. Island of Pelagosa, NETUSCHILL, pp. lxxxviii-xciii Mt. Ver. Steiermark xli. FORMÁNEK (594), Dalmatia, *Ptochus* sp. n. PIC (1190), Morea, *Anaglyptus* sp. n. PIC (1191), Morea, *Dunacera* n. sp. CARRET (282), Syria, *Gynandromorphus* subg. n. PIC (1192), Syria, *Ludius*, Morea, *Ludius*, Crete, *Drilus*, Portugal, *Ptinus* sp. n. PIC (1194), Taurus, *Phyllocerus* n. sp. REITTER (1253), Akbes, *Pilemia* sp. n.
- Hymenoptera*. CAMERON (254), Gibraltar, *Philomides* sp. n. DUSMET (468), Revision of *Apidae* of Spain, pt. 1, *Melicta*, *Crocisa*, *Epeolus*. FRIESE (607), Andalusia, *Panurgus* n. sp. GARCÍA (642), Escorial, *Mutilla*, 2 n. spp. KONOW (886), Spain, *Amasis* n. sp. ALFKEN (18), N. Med. region, *Prosopis* n. sp. GARCÍA MERCET (641), Tangier, *Gorytes*, *Bembex* sp. n. GARCÍA MERCET (640), Tangier, *Bembex*, 2 spp. n. SAUNDERS (1321), Algeria, *Diploptera*, 10 spp. n. SCHULZ (1359), Algeria, Tunis, *Cerceris*, *Pterochilus*, *Philanthus* spp. n. FOREL (591), Tunis, *Formicidae*, 2 spp. n. FERTON (558), Corsica, *Apidae*, 2 spp. n., *Tachysphex* sp. n. ZAVATTARI (1668), Elba and Pianosa, list.
- ANDRÉ (24), Egypt, *Mutilla*, *Apterogyna* n. sp. ASHMEAD (35), Portici, *Pezomachus* n. sp. Italy, *Apidae*, list, PAGANETTI-HUMMLER, pp. 13-16, Zeitschr. Insbiol. i. COBELLI, Verh. Ges. Wien 1906, pp. 596-599, Trentino 68 novelties. ALFKEN (21), Dalmatia, *Prosopis* n. sp. GRAEFFE (685), Trieste and Morea, *Cynips*, 2 spp. n.
- Lepidoptera*. CHAPMAN (302), N. Spain, *Erebica* n. sp. CHRÉTIEN (318), Spain, *Coleophora* n. sp. VÁZQUEZ (1535), Spain, *Heliophobus*, *Boarmia*, *Enconista*, *Cybolomia* n. sp. HIRSCHKE (751), Murcia, *Amphipyra* n. sp. AUSTAUT (44), Atlas, *Satyrus* n. sp. Mogador, *Syntomis alicia*, VAUCHER, p. 13, Fougille Natural. xxxvi. BLACHIER (122), Morocco, *Chrysophanus*, *Canonympha*, *Zygæna*, *Calophasia* sp. n. MEADE-WALDO (1022), Morocco, journey and list. Barcelona, Vernet, *Rhopalocera*, STANDEN, pp. 250-254, 277-280, 299-301.
- CHRÉTIEN (316), S. France, n. g. *Tineidae*. S. France, Cornica, *Rhopalocera*, ROSA, pp. 49-52, Entomologist 1905. HAMPTON (716), Algeria, *Phryganopsis*, *Timora* sp. n. PÜNGELER (1223), Sena n. sp. THIERRY-MIEG (1493), Algeria, *Tephria* n. sp. TURATI (1506), Algeria, *Parascotia* n. sp. WALSHINGHAM (1564), Algeria, *Tineidae* spp. n. BLACHIER (121), Tunis, *Calophasia*, *Cleophana* sp. n. COSTANTINI, Modena and Reggio, novelties, Riv. ital. Sci. Nat. xxv, pp. 15, 61. KRÜGER, Sicily, novelties and *Euchloe damone*, Natural. Sicil. xviii, p. 49. ROSTAGNO (1297), Rome, *Pieris ergane*. ROSTAGNO (1298), Italy, General work, introduction. STEFANELLI, p. 184, Bull. Soc.

ent. Ital. xxxvi, Italy, novelties. TURATI (1508), Italy, *Acidalia*, 2 spp. n. VÉRITY (1540), Florence, *Orgyia* sp. n. VÉRITY (1541), Lucca, annotated list. Island of Capri, suppl. list, BROWNE, p. 82, Entomologist 1905. RAGUSA (1231), Sicily, Catalogue. KRONE (896), Fiume, *Stigmatophora* n. sp. FLETCHER, Malta, list completed, Entomologist 1905, pp. 18-20. Egypt, GRAVES, pp. 147-150, Ent. Rec. xvii. Beyrout, GRAVES, pp. 56, 57, 121-124, Ent. Rec. xvii. HABICH (711), Haifa, *Pseudophia* sp. n.

Diptera. KIEFFER (844), gall-dwelling Cecids. n. genn., n. spp. RICARDO (1266), N. Africa etc., *Tabanida*, 1 sp. n. BILLET (118), Algeria, *Anopheles chaudoyei*, distribution. SERGENT (1382), Algeria, *Grabhamia* n. sp. THEOBALD (1477), Tunis, *Culicida*, 4 spp. n. BEZZI (113), S. France, Italy, S. Hungary, *Clinocera* spp. n. NOÉ (1105), Rome, *Chironomida* n. g. KIEFFER & TROTTER (849), Avellino, *Cecidomy*, 2 spp. n. TROTTER (1503), Italy, *Janetiella* sp. n. STROBL (1455), Balkan penins., *Tipulide*, *Strat.*, *Bombyl.*, *Emp.*, *Asil.*, *Scenop.*, *Lept.*, *Syrph.*, *Conop.*, *Tachin.*, *Acalyptr.* spp. n. *Hemiptera*. HORVÁTH (779), Spain, *Heter.* and *Homopt.*, 7 spp. n. REUTER (300), Spain, 2 spp. n. DEL GUERCIO (392), Firenze, *Sipha* n. sp.

Coccida. MARCHAL (1005), Algeria, 3 spp. n. LINDINGER (966), Corsica, *Leucaspis* n. sp.

Trichoptera. ULMER (1518), Algeria, *Trianodes* n. sp. *Neuroptera* s. l. Calatrava, list, NAVÁS, p. 502, Bol. Soc. espan. v. S. France and Spain, LUCAS, pp. 296, 297, Entomologist 1905.

Psocida. RIBAGA (1264), Florence, *Stenotroctes* n. sp. ENDERLEIN (497), N. Africa, *Lepinotus* n. sp., *Pachytroctes* n. g.

Embiida. RIMSKY-KORSAKOW (1267), Villefranche-sur-mer, *Embia* sp. n.

Odonata. MORTON (1073), Algeria, *Ischnura* n. sp.

Orthoptera. Valladolid, list, GUTIÉRREZ, Bol. Soc. espan. v, pp. 140-143. BOLÍVAR (132), Tangier, *Racocleis* n. sp. BOLÍVAR (133), Mogador, *Gryllomorpha* n. sp. WERNER (1615), Egypt and Tunisia, *Eremiaphila*, 3 spp. n. MEI (1023), Friuli, list. PAOLI, Rome, *Acridiida*, 3 additions, Boll. Soc. zool. Ital. xiv, pp. 283, 284. KRAUSS (892), Montenegro, list, *Forfic.* sp. n.

Thysanura. Japyx, Madrid, NAVÁS, p. 483, Bol. Soc. espan. v. SILVESTRI (1397), Molfetta, n. g. *Campodeida*.

Collembola. CARL & LEBEDINSKY (277), Crimea, n. g.

(h.) *Caucasus* and *West and Central Asia*, including *Arabia* [see also (a.) and (b.)]: for Tibet see 6, for Mediterranean Asia see (g.).

Coleoptera. FAIRMAIRE (536), Aresch, *Prionus* n. sp. REITTER (1251), Araxes Valley, *Proteinus* sp. n. CARRET (283), Mesopotamia, *Bembidium* n. sp. MAINDRON (1001), Mesopotamia, Arabia, *Glycia* sp. n. PIC (1179), Bagdad, *Adoretus* n. sp. KERREMANS (835), Persia, *Julodis* n. sp. NONFRIED (1108), Persian Kurdistan, *Dorcus* n. sp. PIC (1193), W. Asia, *Anoxia*, *Rhagonycha*, *Ctenopus*, *Strophomorphus* and n. g. near *Mylacus* n. sp. REITTER (1252), Transcaspian, *Dromius* sp. n. PIC (1170), Transcaspian, *Anthicus* n. sp. REITTER (1246), Transcaspian, *Throscus*, *Gonocephalum*, *Agapanthia*, *Stylosomus* sp. n. SUMAKOW, Transcaspian region, *Pinophilus* and *Mesostenus*, Wien. ent. Zeit. xxiv, p. 28. PIC (1190), Arabia, *Adoretus* n. sp., Tokat, *Iloradion* sp. n. CAMERON (237), Perim, *Ocladius* n. sp. FAUVEL (546), Perim, *Staphylinida* n. sp.

Hymenoptera. KONOW (886), Asia Minor, *Amasis* n. sp. ZAVATTARI (1669), Syria, list. KONOW (884), Turkestan, Teheran, *Tenthredinidae*, 3 spp. n. ASHMEAD (38), Russian Turkestan, *Mymaridae*, 2 spp. n. KOHL (877), Socotra and S. Arabia, summary of collection.

Lepidoptera. DZIURZYŃSKI (486), Armenia, *Zygana* sp. n. DZIURZYŃSKI (487), Caucasus, *Zygana* n. sp. PÜNGELER (1222), Aksu, *Mamestra* n. sp.

Diptera. SPEISER (1437), Red Sea, *Pseudofersia* sp. n. PATTON (1140), Aden, *Culicidae*, 5 spp. n.

Hemiptera. DISTANT (427), Aden, n. g. *Cicadida*. DISTANT (426), Socotra, *Cicadida* n. sp.

Coccidae. LINDINGER (966), Persia, *Leucaspis* n. sp.

Orthoptera. KUTHY (906), Centr. Asia, *Aoridiidae*, 4 spp. n. BURN (819), Sokotra, *Forficulidae*, 2 spp. n.

4. AFRICA (TROPICAL & SOUTH). For North Africa see 3 (g.): for Comoro and Aldabra Ids. see 5. Socotra, see 3 (h).

Insecta. SJÖSTEDT (1403), Cameroons, list of insects found, pp. 22-86. AUSTEN (45), Uganda, short list.

Coleoptera. AURIVILLIUS (41), White Nile and Khartum, *Bayous* and *Baris* sp. n. BERNHAUER (103), *Bledius* n. sp. BOUQUENOIS (150), Spanish Guinea, *Malacodermidae*, 6 spp. n. BRAEM (170), Congo, *Fornasinus* n. sp. CLAVAREAU (322), Congo, *Megalopides*, 2 spp. n. DISTANT (421), Natal, *Cerambycidae*, 3 spp. n. ESCALERA (524), Rio de Oro, *Eulipus* n. sp. FAUVEL (546), *Staphylinidae* spp. n. FAUVEL (550), *Staphylinidae*, 10 spp. n. FAUVEL, Rev. Ent. franc. 1906, p. 148, *Erythraea*, *Staphylinidae*, short list. GEBIEN (646), White Nile, *Ademia* n. sp. GESTRO (649), *Erythraea*, *Hispidae* sp. n. GORHAM (676), S. Africa, *Clerida*, 4 spp. n., *Melyridae*, 6 spp. n., (*Ediarthrus* sp. n. GOUVEILLÉ (703), W. Africa, *Cautomus* n. sp. HAGEDORN (714), E. Africa, *Scolytos* sp. n. HARTMANN (726), *Niphades*, 2 spp. n. HARTMANN (727), W. Africa, *Megarhinus* n. sp. HEATH (730), W. Africa, *Cerambycidae*, 3 spp. n. HEATH (731), Angola, *Cicindelidae*, *Cerambycidae* sp. n. HINTZ (750), *Clerida*, 17 spp. n. HINTZ, Fernando, Po., *Clerida*, short list, Deutsche ent. Zeitschr. 1906, p. 314. HORN (764), E. Africa, *Cicindela*, 2 spp. n. HORN (766), Cameroons, *Cicindelidae*, short list. HORN (771), E. Africa, *Odontochila* and *Cicindela* sp. n.

KERREMANS (835), *Buprestidae*, 5 spp. n. KOLBE (879), *Dynastidae* n. genn., 6 n. spp. LESSE (940), *Bostrychidae*, 3 spp. n. LESSE (945), Spanish Guinea, *Bostrychidae*, annotated list. LÉVEILLÉ (948), *Trigonitidae*, 3 spp. n. LEWIS (952), Trop. Africa, *Histeridae*, 3 spp. n. LEWIS 953, Angola, *Macrodieta* n. sp. LEWIS (954), Abyssinia, *Paratropus* n. sp. MAINDROS (1001), *Erythraea*, *Carabidae*, 4 spp. n. MARSHALL 1010, S. Africa, *Cossonus*, 6 spp. n. MÖMER (1076), Africa trop., *Cerambycidae*, 4 spp. n. OBT 1114, E. Africa, *Buprestidae*, 4 spp. n. OHACS 1119, Omdurman, *Adoretus* n. sp. OLIVIER (1121), White Nile and Abyssinia, *Luciola* n. sp. OLIVIER 1123, Pretoria and Graham, *Luciola*, 2 spp. n. D'ORBIGNY (1124), *Orthophagus*, many spp. n. PIC 1172, *Formicomyia*, 2 spp. n. PIC (1176), *Hydrophilus*, 3 spp. n. PIC 1180, E. Africa, *Zygis* n. sp. PIC (1182), Timbuctoo, *Schizomyia* n. sp. PIC 1187, Oboc, *Zygis* n. sp. PIC 1196, Spanish Guinea, *Xylophilus*, 10 spp. n. REINHART 1224, *Erythraea*, *Dytiscidae*, *Hydrophilidae* spp. n. REITTER 1244, *Opatrius* spp. n. RETZEMA (1274), Cameroons, *Helota* n. sp.: Africa, *Helota*, 2 spp. n., id. 1276. RETZEMA 1313, Africa trop., *Dyschirius*, *Atractodes*, *Eudemus* n. sp. SCHAEFFER (1229), *Scolytidae*, 3 spp. n. SCHULZ (1260), Zanzibar,

- (771), *Pogonostoma*, *Odontochila* n. sp. LAMEERE (910), *Hoplodores*, 4 spp. n. LEWIS (954), *Histeridae*, 2 spp. n. LEWIS (953), *Histeridae*, 2 spp. n. NONFRIED (1107), *Protopocelus* n. sp. PIC (1175), *Petalium* n. sp. SCHAUFUSS (1328), *Scolytoplatus*, *Xyleborus* spp. n. SCHWARZ (1370), *Elateridae*, 8 spp. n. SPAETH (1430), *Cassididae*, 4 spp. n. THÉRY (1488), *Buprestides*, general work, many spp. n. WEISE (1610), Mauritius, *Brontispa* n. sp.
- Hymenoptera*. ANDRÉ (24), *Mutilla*, 2 spp. n. BUYSSON (232), *Polistes*, 2 spp. n. FOREL (591), *Formicidae*, 2 spp. n. KIEFFER (841), Madagasc. *Proctotryp.*, 5 spp. n., Réunion, 1 sp. n.
- Lepidoptera*. BASTELBERGER (81), *Gullaca* n. sp. HAMPSON (715), Seychelles and Mauritius, *Hadeninae* n. sp. HAMPSON (717), Madag. and Mauritius, *Noctuidae* n. spp.
- Diptera*. VENTRILLON (1537), *Culex*, *Stegomyia* sp. n. VENTRILLON (1538), *Culicidae*, 4 spp. n.
- Hemiptera*. BERGROTH (98), *Pentatom.* 2 genn. n., *Cletomorpha*, *Lycaide* n. g., *Letharus* n. sp., *Reduv.* n. g., *Henicocephalus*, 2 spp. n. BREDDIN (180), n. g. *Henicocephalidae*. DISTANT (426), *Cicadidae*, 3 n. spp. DISTANT (427), Mauritius, *Stagira* n. sp. DISTANT (431), *Cicadidae*, 7 sp. n., Seychelles, 1 sp. n. SCHMIDT (1333), *Lichena* n. sp. SCHOUTEDEN (1346), Madagascar, *Catacanthus* sp. n., *Nesara* sp. n., Mauritius, *Nesara* sp. n. SCHOUTEDEN (1347), *Pentatomidae*, 5 spp. n. VARELA (1533), *Margarus*, 4 spp. n.
- Trichoptera*. ULMER (1517), 4 spp. n. ULMER (1518A), 2 spp. n. BOLÍVAR (130), Mad. & Nossibé, *Atractomorpha* and *Orthacrinæ* spp. n. BURR (220), *Chatospania* n. sp.
- Thysanura*. ESCHERICH (525), gen. n.

6. TROPICAL and EASTERN ASIA, incl. JAPAN and TIBET.

For outskirts see also 3 (a.), (g.), (h.). Arabia, see 3 (h.).

- Insecta*. ALFKEN (16), Japan, *Hym.*, *Lep.* and flowers visited. KIEFFER (846), Bengal, Gall insects, 20 spp. n. NAVÁS (1084), Japan *Ascalaphus*, China n. g. *Hemerob.*, Himalaya *Scyllina*, *Mantispa*, *Glenurus* n. sp.
- Coleoptera*. ARROW (30), Malay penins., *Aphodiid.*, 2 spp. n. BOILEAU (126), India, Formosa, *Lucanidae*, 3 spp. n. BOURGEOIS (152), Ceylon, *Malacod.*, 7 spp. n., *Atractocerus* sp. BOURGEOIS (157), Bengal, *Lycidae*, 4 spp. n. DESNEUX (400), India, *Ceratoderus* n. sp. FAIRMAIRE (537), Kouitcheou, n. g. *Cetoniidae*. FAUVEL (546), India etc., *Staphylinidae* spp. n. FLEUTIAUX (580), India, *Elateridae*, 8 spp. n. HORN (763), India and Ceylon, *Cicindelidae*, 2 spp. n. HORN (767), S. India, *Derocrania* sp. n. HORN (770), Ceylon, Travancore, Siam, *Collyria*, 3 spp. n. HORN (771), Assam, *Therates* n. sp. JACOBY (810), Malay penins., *Chrysomelidae*, 10 spp. n. LAPOUGE (914), Japan, *Curabus*, short list. LÉVEILLÉ (947), Tonkin, *Acropsa*, India, *Ancyrona* spp. n. LÉVEILLÉ (948), China, *Alindria* sp. n. LEWIS (953), Trop. Asia, India etc., *Histeridae*, 4 spp. n. LEWIS (954), India, *Platysoma* sp. n., Yunnan, *Hister* sp. n. MAINDRON & FLEUTIAUX (1002), S. India, *Cicindelidae*, list. MOSER (1076), Assam, *Trichius* n. sp. NONFRIED (1106), S. W. China, *Prismognathus* n. sp. NÉRIMA (1110), Japan, *Scolytus*, 3 spp. n. OHAUS (1115), Tonkin, India, *Rutelidae*, 17 spp. n. OLIVIER (1123), Pondichery, *Luciola* n. sp. PIC (1177), Shanghai, *Macratris* n. sp. PIC (1181), Yunnan, *Cerambycidae*, 5 spp. n., Japan, *Obrivm* n. sp. PIC (1182), India, *Attalus*, *Ebanus* sp. n. PIC (1186), Japan, *Podubus* and *Cuntharis* etc., 4 spp. n. PLANET (1208), Se-Tschuen or Yunnan? *Pseudolucanus* n. sp. REITTER (1244), China, India, *Tene-*

- brionidæ* n. sp. REITTER (1248), Tien-tsin, *Epicauta* sp. n. REITTER (1249), China, *Melolonthidæ* sp. n. RITSEMA (1273), Tonkin, Tenasserim, China, Bhutan, *Helota*, 8 spp. n. SCHAUFUSS (1328), Ceylon, *Coccotrypes* sp. n. SCHWARZ (1369), N. India and Ceylon, *Elateridæ*, 13 spp. n. SHARP (1385), Korea, E. Asia, Tibet, *Crioceraphalus*, 5 spp. n. SPAETH (1430), Tenasserim, *Lacocoptera* n. sp. WATERHOUSE (1590), Ceylon, *Chrysodema* sp. n. WEISE (1599), Lower India, *Cassidides* and *Hispides*, catalogue with 10 spp. n. WEISE (1605), Assam, *Chirida* n. sp. WEISE (1606), Darjiling, *Potaninia* n. sp. WEISE (1607), Yunnan, *Coccinellidæ* n. sp. ZANG (1660), Tonkin, *Passalidæ*, 3 spp. n. ZANG (1662), Ceylon, *Lucanidæ* and *Passalidæ*, *Figulus* sp. n. ZANG (1665), India, *Passalidæ*, 2 spp. n. ZANG (1666), Ceylon, *Leptaulacides* sp. n.
- Hymenoptera*. ANDRÉ (24), Pekin, *Mutilla* n. sp. CAMERON (338), Khasia Hills, *Sphegidæ*, *Ceropalidæ*, 47 spp. n. CAMERON (241), India, *Fossoria*, 5 spp. n. CAMERON (243), India, *Fossoria*, 2 spp. n., *Ichneumon*. 6 spp. n., *Bracon*, 2 spp. n. CAMERON (253), Sikkim, *Ichneumonidæ*, 18 spp. n. CAMERON (257), India, *Ichneum.*, *Chalcid.*, 16 spp. n. CAMERON (266), Japan, *Ampulæ* n. sp., Sikkim, *Icaria* n. sp. CAMERON (269), Singapore, *Agathis*, *Buodias*, *Skeatia*, n. sp.; Himalaya *Pleuroneurophion* n. sp. CAMERON (270), Ceylon, 36 spp. n., *Ichneumon.*, *Bracon.*, *Evan.*, *Chalcid.*, *Bethyl.*, *Siricid.* CAMERON (271), Ceylon, *Ichneumonidæ*, 58 spp. n. COOKERELL (326), Kashmir, *Bombus* n. sp. EMERY (493), Tsushima, *Pachycondyla* sp. n. ENDERLEIN (499), Siam, *Stantonia* n. sp. ENDERLEIN (502), Burma, *Evania* sp. n. FOREL (591), Nicobar Islds., *Formicidæ*, 2 spp. n. FRIESE (601), Ceylon, Perak, Tsushima, *Crocisa* spp. n. FRIESE (611), W. China, *Bombus* n. spp. KIEFFER (841), India, Burma, *Proctotrypidæ*, 7 spp. n. KOHL (874), Japan, *Crabro* sp. n. MOCÁRY (1035), *Rhyssa*, 3 spp. n. PÉREZ (1146), Japan, *Aculeata*, many spp. n. SZÉPLIGETI (1466), Singapore, *Braconidæ*, 6 spp. n.
- Lepidoptera*. Geographical relation of *Lepidopterous* fauna of Japan, ELWES, pp. xli-xliv, P. Ent. Soc. London 1905. ADAMSON (7), Burmah, *Rhopalocera*, list of, 253 spp. BASTELBERGER (80), Assam, *Gullaca* n. sp. BASTELBERGER (81), N. India, *Dilophodes*, *Mnasiloba* n. sp. BINGHAM (119), India, Ceylon and Burma, *Rhopalocera*, general work. H. H. DRUCE (459), Malay Penins., list of 51 spp. DUDGEON (465), India, *Soritia*, *Acanthopsyche*, *Mahasena*, *Nonagria*, *Pterognia*, *Chilo*, *Polyocha*, sp. n. DUDGEON, Catalogue of the *Heterocera* of Sikkim and Bhutan, Part xvii, *Noctuidæ* contd., J. Bombay Soc. xvi, pp. 275-291. DYAR (470), Japan, *Zygaenidæ*, *Limacodidæ*, *Geometridæ* and *Pyrusta* n. sp. HAMPSON (715), China, Japan, India etc., *Hadeninae* n. spp. HAMPSON (717), India, Japan etc., etc., *Noctuidæ* n. spp. HAMPSON (718), Ceylon, n. g. *Orneodidæ*. HAMPSON (719), India and Ceylon, Bombyces, 22 spp. n. JANET (814), Laos, *Stichophthalma* sp. n. LONGSTAFF (972), India and Ceylon, *Rhopalocera*. LONGSTAFF (974), Hong Kong, *Orsonoba* n. sp. MEYRICK (1043), India, *Microlepidoptera*, 89 spp. n. MOORE (1062), India, work on *Rhopalocera* continued, *Pieridæ*, 3 spp. n. NAGANO (1082), Japan, *Sphingidæ*. RHÉ-PHILIPPE, Lucknow, *Rhopalocera*, J. Bombay Soc. xvi, pp. 720-722. Malay States, *Dodona deodata*, ROBINSON, J. Fed. Malay Museums i, p. 15. SOUTH (1429), Japan and Korea, *Noduria* n. sp. SWINHOE (1459), India, Malay Penins., *Drepan.*, *Hepial.*, *Noctuidæ*, *Geometridæ* spp. n. SWINHOE (1460), Khasia Hills, *Limacod.*, *Lasioc.*, *Noctuid.*, *Geometr.*, 4 spp. n., *Rhodoneura*, 3 spp. n. SWINHOE (1461), India, Burma, Ceylon, *Chalcosidæ*, *Noctuidæ*, 3 spp. n. SWINHOE (1462), India, *Drepanulid.*, *Noctuid.*, *Geometrid.* n. spp. THIERRY-MIEG (1493), Japan, *Problepsis* n. sp. WARREN (1569), China, *Geometridæ*, 2 spp. n.,

Shan States, Hyalomprus sp. n. WARREN '1574. Ceylon, *Geometr.*, 2 spp. n., Shan States, 1 sp. n., Hainan, 3 spp. n. and *Epiplema*, 2 spp. n. YOUNG '1645. India, *Rhopalocera*.

Diptera. ADIE & ALCOCK 11., Calcutta, *Anopheles listoni*. BECK '115. Pekin, *Sytropus*, 2 spp. n. BRUCE '201. India and Singapore, *Phoridae*, 5 spp. n. CHALMERS '297. Ceylon, *Anophelineae*, distribution. SPELMER '1437. Tenasserim, *Atersia*, Ceylon, *Lipopterus* sp. n. THEOBALD '1476. Bombay, n. g. *Culicida*. THEOBALD '1477. India, Singapore, *Culicida*, 7 spp. n. THEOBALD '1478. India, *Culicida*, 4 spp. THEOBALD '1490. Ceylon, *Culicida*, 6 spp. n. THEOBALD '1481. India, n. g. *Culicida*.

Aphaniptera. RUTHSCHILD '1301. Malay States, *Ceritophyllus*, 2 spp. n. *Hemiptera*. BREDDIN '153. India and Cochin China, *Chrysocoria*,

2 spp. n. DISTANT '422. Yunnan, Assam, Tenasserim, *Dandubaria*, 3 spp. n. DISTANT '423. India, *Terpsocia* sp. n. DISTANT '424. Hong Kong, *Mogannia* n. sp., Mta. Song-Chai, n. g. *Cicadida*. DISTANT '426. China, *Cicadida*, 2 spp. n. DISTANT '427. China, *Quintilia* n. sp. DISTANT '429. China, N. China, Siam, Tonkin, *Cicadida* n. sp., Siam, *Pyrops* n. sp. DISTANT '430. Malacca, Cochin China, *Platypleura*, 2 spp. n. DISTANT '431. Ta-tsiensu, *Platylomia*, 2 spp. n. DISTANT '431. Tibet, *Onotympana* sp. n. DISTANT '432. Yunnan, *Gaana* n. sp. DISTANT '434. Ceylon, *Aneurys* n. sp. HORVÁTH (774), Japan, n. g. *Berytidae*. HORVÁTH (776), Japan, *Heteroptera*, 15 spp. n.

JACOBI '605. Assam, Burma, *Cercopida*, 2 spp. n. JACOBI '806. Tonkin, *Cicad.*, 1 sp. n., *Fulgor.*, 2 spp. n., *Cercop.*, 4 spp. n., *Jassid.*, 1 sp. n. KIRKALDY '858. India, *Gypona* sp. n. KIRKALDY '862. Ceylon, *Micromecta* sp. n. REUTER (1259). Szechwan, China, *Capida*, many spp. n. REUTER (1261), India, *Crostylis* sp. n. SCHMIDT (1333), Tonkin, *Fulgora* n. sp. SCHOUTEDEN (1341), *Scotinophara* n. sp. SCHOUTEDEN (1348), Ceylon, *Aphidæ*, 2 spp. n.

Coccida. GREEN '687. Ceylon, 17 spp. n. LINDINGER (967), Singapore, *Parlatorea* n. sp., Japan n. g. MARCHAL (1005), Ceylon, *Asterolecanium* sp. n.

Trichoptera. BANKS (72), Japan, 12 spp. n. ULMER (1517), Sikkim, Japan, 5 spp. n. ULMER (1518), Moupin, *Rhyacophila* sp. n., India, *Ptilochorema* sp. n. ULMER (1518a), Assam, *Dinurthrum*, Ceylon, *Macronema*.

Perlida. NEEDHAM (1089), Japan, *Perlida*, 3 spp. n. *Termitida*. DEMSEUX (401), Sind, *Termes*, 3 spp. n., *Hodotermes* n. sp. *Odonata*. FOERSTER (584), Tonkin, 2 spp. n. KIRBY (852), Ceylon *Zygionidia* sp. n., Tonkin, *Zygionidia*, *Oxychothemis* sp. n.

Thymnura. BOUVIER (162), Tibet, *Japyx dur.* *Collembola*. BECKER (88), Persian Gulf, n. g. *Collembola*.

Orthoptera. BOLÍVAR (129), Singapore, *Xiphidiopsis* n. sp. BOLÍVAR (130), India, China, *Atractomorpha*, 5 spp. n., *Orthocoris* n. sp. BOLÍVAR (130), Malay penins. Cambodia, *Pyrgomorphida*, 2 spp. n. BURR (220), Tonkin, N. India, Mou-Pin, *Forficulida*, 3 spp. n. BURR (221), India, *Forficulida*, 4 spp. n. BURR (222), India, *Opisthocossia* n. sp. DOERN (443), Tonkin, *Hexacentrus* n. sp. KRAUSZE (894), Tonkin, *Conocephalus*, 2 spp. n. REHN (1237), Siam, Pekin, *Forficulida*, 3 spp. n. WILLET (1632), Ceylon, short list.

7. ASIATIC ARCHIPELAGO, including PAPUA. (For islands beyond Papua see 2. Insular.)

Insecta. ALFKEN (16), Java, *Hym.* and *Lep.* and flowers they visited. BIRÓ (120), New Guinea, notes.

- Coleoptera*. ARROW (30), Philippines, *Rhyparus* sp. n. BERNHAUER (103), Java, Sumatra, Engano, *Staphylinidae* n. spp. BOILEAU (126) *Lucanidae*, 7 spp. n. FAUVEL (544), Java, *Staphylinidae*, 10 spp. n. FAUVEL (546), Java, Sumatra, Borneo, *Staphylinidae* spp. n. HARTMANN (726), Sumatra, *Niphae* sp. n. HELLER (737), New Guinea, *Lomaptera* n. sp., *Cerambycidae* n. g., *Curculionidae*, 8 spp. n. HORN (769), New Guinea, *Cicindela* n. sp. JANSON (815), New Guinea, *Cetoniidae*, 7 spp. n. LÉVILLÉ (949), Java, *Ancyrona* n. sp. LEWIS (953), Borneo, *Coryphaeus* sp. n. LEWIS (954), Sumatra, New Guinea, *Platysoma*, 3 spp. n. MÖLLENKAMP (1057), Borneo, *Odontolabis*, *Proscopalus* sp. n., Sumatra, *Eurytrachelus* sp. n. MOSER (1076), Dammer iald. *Protactia* n. sp., Key islds., *Clinteria* n. sp. OHAUS (1115), Java, Philippines, Timor, *Rutelides*, 4 spp. n. OLIVIER (1123), Java, Borneo, *Luciola* and *Curtos*, 3 spp. n. PIC (1182), New Guinea, *Rhinosimus* n. sp. PIC (1183), Philippines, *Adoretus* n. sp. PIC (1186), Java, Sumatra, *Laisus*, 3 spp. n. REITTER (1244), Java, *Scleron* n. sp. RITSEMA (1271), Borneo, *Apogonia*, 4 spp. n. RITSEMA (1275), Sumatra, *Cryptoderma* n. sp. SCHWARZ (1369), Sumatra, *Hemiops* sp. n. VETH (1547), Sumatra, *Cryptoderma* n. sp. WEISE (1608), New Guinea, *Dactylispa* n. sp. ZANG (1655), Padang and Palawan *Passalid.*, 2 spp. n. ZANG (1659), Amboyna, *Analaches* n. sp. ZANG (1663), *Passalida*, Borneo, 3 spp. n., Andamans, 1 sp. n. ZANG (1665), *Passalida*, 7 spp. n. ZANG (1667), Sumbawa and New Guinea, *Passalida*, 2 spp. n.
- Hymenoptera*. ANDRÉ (24), Celebes, New Guinea, *Mutillidae*, 4 spp. n. ASHMEAD (31), Philippines, 28 n. spp. ASHMEAD (32), Philippines, *Fossor.*, *Formic.*, *Ichn.*, *Bracon.*, *Proct.*, *Cynip.*, 23 spp. n. ASHMEAD (33), Philippines, *Parasitica*, 27 n. spp. ASHMEAD (34), Philippines, *Vespidae*, *Ichneumon.*, *Bracon.*, *Chalcid.*, *Proct.*, *Cynipidae*, n. spp. DU BUYSSON (233), Java and Sumatra, *Ichnogaster*, 2 spp. n. CAMERON (240), Borneo, *Evaniidae*, *Bracon.*, *Ichneumon.*, 11 spp. n. CAMERON (245), Borneo, *Ichneumonidae*, 3 genn. n. CAMERON (265), *Ichneumonidae*, *Braconidae*, 10 spp. n. CAMERON (266), *Vespidae* and *Fossoria*, 17 spp. n. CAMERON (267), Borneo, *Iphiaulax* and *Chaolta*, 30 spp. n. CAMERON (268), Borneo, *Chalcis* n. sp. CAMERON (269), Borneo, *Apida*, *Odynerus*, *Fossoria*, *Ichneumon.*, *Bracon.*, *Evani.*, *Chalcid.*, *Siricidae* spp. n. COCKERELL (326), Ternate, *Crocina* n. sp. COCKERELL (329), Sumatra, *Bombus* n. sp. EMERY (493), Borneo, Timor, *Formicidae*, 3 spp. n. ENDERLEIN (498), Sumatra and Philippines, *Gastrotheca*, *Spinaria* n. spp. and n. g. ENDERLEIN (502), Sumatra, Borneo, *Evania*, 3 spp. n. FOREL (592), Java, *Formicidae*, 21 spp. n. FRIESE (601), *Crocina*, 7 spp. n. FRIESE (602), Sunda islds., *Megachile* sp. n. MocsÁRY (1055), Java, Borneo, New Guinea, Waigiu, *Rhyssa* soc., 5 spp. n. SZÉPLIGETI (1465), Java, New Guinea, Celebes, *Ophionidae*, 10 spp. n. SZÉPLIGETI (1466), *Braconidae*, many spp. n.
- Lepidoptera*. BASTELBERGER (80), Borneo, *Bulonga*, Sumba, *Abraxas*, sp. n. BASTELBERGER (82), Borneo, Obi, *Dysphania*, 3 spp. n. BASTELBERGER (83), *Dysphania*, 4 spp. n. BETHUNE-BAKER (110), New Guinea, *Leucania*, 2 spp. n. BETHUNE-BAKER (111), New Guinea, *Leucania* n. sp. FRUHSTORFER (621), Toli-toli, *Imene* n. sp. FRUHSTORFER (622), New Guinea *Tenaris*, Mafor and Jobi *Cethosia*, n. sp. FRUHSTORFER (623), Kaju, *Tenaris* sp. n. HAMPSON (715) Java and New Guinea, *Hadenina* n. spp. HAMPSON (716), Java, Borneo, Sala, Sangir, *Syntomid.*, *Arctiid.*, *Noctuid.*, spp. n. HAMPSON (717), *Noctuidae* n. spp. PIEPERS & SNELLEN (1903), Java, *Lithonidae*, *Agaristidae*, list. ROTHCHILD & JORDAN (1307), British New Guinea, n. spp. of *Nymphal.*, *Satyr.*, *Pierid.*, *Lycan.*, *Erycin.*, *Chalcos.*, *Hepialid.*, *Bombyc.*, *Noct.*, *Geometr.*, *Pyrul.* SWINHOE (1459), Borneo, *Chalcos.*, *Drepan.*, *Limacod.*, *Lymantr.*, *Noctuidae*, *Agathia*, spp. n.; New Guinea, *Zethes*, *Hypona*, spp. n. SWINHOE

- (1460), Borneo, Sumatra, *Phacoria* n. sp., *Ctenane* n. g. *Lithos*. SWINHOE (1461), *Heterocera*, 7 spp. n. SWINHOE (1462), *Hesperidae*, *Aganais*, *Arctid.*, *Noctuidae*, *Epiplema*, n. spp. THIERRY-MIEG (1493), *Geometridae*, 4 spp. n. WARREN (1569), Sumatra, Batchian, New Guinea, Christmas isld., *Thyrididae*, *Epiplema*, *Geometr.*, 7 spp. n. WARREN (1574), *Geometridae* 15 spp. n., *Epiplema* 3 spp. n.
- Diptera*. BRUES (201), New Guinea, *Phoridae*, 7 spp. n. LUDLOW (984), Philippines, *Culicidae* n. genn., n. spp. MEIJERE (1024), Java, *Siphonella* n. sp. SPEISER (1437), Philippines, *Olfersia* n. sp. THEOBALD (1477), New Guinea, *Culicidae*, 14 spp. n.
- Hemiptera*. BREDDIN (180), Java, *Heteroptera*, 21 spp. n. BREDDIN (181), Banguay, fauna, 11 n. spp., *Pentat.*, *Coreid.*, *Lygoid.*, *Reduv.*, *Cicad.*, *Fulg.*, *Jassid.* BREDDIN (183), *Calliphara* and *Chrysocoris*, 5 spp. n. BREDDIN (185), Java, *Micronecta*, 5 spp. n. DISTANT (422), Philippines, Borneo, New Guinea, *Dundubiaris*, 6 spp. n. DISTANT (423), Java, *Kamalata* sp. n. DISTANT (425), Celebes, Philippines, *Cicadidae* sp. n. DISTANT (424), Java, *Mogannia* n. sp. DISTANT (428), Java, n. g. *Cicadidae*. DISTANT (429), Java, Borneo, Nias, New Guinea, *Cicadidae* n. spp., *Pyrops* and *Fulgora* n. sp. DISTANT (430), Borneo, Sunda isld., *Cicadidae*, 2 spp. n. DISTANT (431), Borneo, *Cosmopsaltria* sp. n. HORVÁTH (774), New Guinea, *Berytida*, 2 spp. n. JACOBI (805), *Cercopidae*, 19 spp. n. KIRKALDY (862), Philippines, *Micronecta* sp. n. MONTANDON (1058), Philippines, *Ranatra* n. sp. SCHMIDT (1332), *Ricanidae*, 5 spp. n. SCHMIDT (1333), Sumatra, Borneo, *Fulgoridae*, 6 spp. n. SCHOUTEDEN (1340), New Guinea, *Colepticus* sp. n. SCHOUTEDEN (1344), Java, *Graphosomini* n. g.
- Coccidae*. GREEN (688), Java, 4 spp. n.
- Trichoptera*. ULMER (1517), Sumatra, etc., 8 spp. n. ULMER (1518a), Borneo, Java, 2 spp. n. ULMER (1519), Java, 5 spp. n.
- Pertidae*, *Ephemeridae*. KLAFALEK (866), Java sp. n.
- Termitidae*. DESNEUX (401), Borneo, *Termes* n. sp. DESNEUX (402), New Guinea, 8 spp. n.
- Thysanoptera*. ASHMEAD (37), Philippines, *Thrips* n. sp.
- Thysanura*. ESCHERICH (525), *Lepismatidae*.
- Orthoptera*. BOLÍVAR (129), New Guinea, *Conocephalides*, 10 spp. n. BOLÍVAR (130), *Atractomorphinae* spp. n. BOLÍVAR (130), Obi, Lombok, New Guinea, *Pyrgomorphidae*, 2 spp. n. BOLÍVAR (130), Borneo, Engano, New Guinea, *Pyrgomorphidae*, 8 n. spp. BOLÍVAR (130), Sumatra, *Orthacrinae*, 2 spp. n. BURR (219), Java, Mentawai, Batchian, *Forficulidae*, 3 spp. n. BURR (220), Java, *Labi* n. sp. DOERN (443), *Conocephalides*, 10 spp. n. NAVÁS (1084), Philippines, *Hedotettix*, 2 spp. n.

8. AUSTRALIA and TASMANIA. (For New Zealand see 2. Insular.)

Insecta. WALKER (1563), Sydney, field notes.

- Coleoptera*. BLACKBURN (123), *Liparochrus*, *Systellogides*, *Liparetrus* n. spp. BOILEAU (126), *Lucanidae*, 5 spp. n. CARTER (284), *Heteromera*, 14 spp. n. LEA (924), *Cryptorhynchides*, 8 spp. n., n. g. LEA (925), Austr. and Tasmania, *Cureulionidae*, 34 spp. n. LEA (926), N. S. Wales, *Illaphanus* sp. n. LEA (928), *Nepharis*, *Ptinidae* n. g., *Tribolium* sp. n. PERKINS (1152), *Stylopidae* n. spp. SLOANE (1410), *Scaritini*, revision with n. spp. SLOANE (1411), *Cicindela*, 5 spp. n. SLOANE (1412), distribution and list, Australian *Carabine*.
- Hymenoptera*. ANDRÉ (24), *Ephutomorpha*, 5 spp. n. ANDRÉ (26), Sydney, *Formicidae*, 2 spp. n. BRADLEY (167), S. Australia, *Megalura* sp. n.

CAMERON (265), *Stephanus*, *Megalyra* n. sp. COCKERELL (326), *Apida*, novelties, 5 spp. n. COCKERELL (327), and Austr. Tasmania, *Apida*, 9 spp. n. COCKERELL (328), *Apida*, 4 spp. n. COCKERELL (329), *Apida*, 11 spp. n. COCKERELL (330), Austr. and Tasmania, *Apida*, 20 spp. n. COCKERELL (331), Austr. and Tasmania, *Apida*, 10 spp. n. COCKERELL (334), *Nomia*, 7 spp. n. COCKERELL (335), *Apida*, 7 spp. n. COCKERELL (336), *Apida* n. g. FRIESE (601), *Crocisa*, 2 spp. n. FROGGATT (612), *Chalcididae*, 2 spp. n. KIEFFER (841), *Epyris* n. sp., *Bethylinæ* n. g. KONOW (885), Australia and Tasmania, *Tenthredinidae*, 3 spp. n. MAYR (1017), n. g. *Perilampides*. PERKINS (1150), Queensland, *Dryinidae* genn. and spp. n. PERKINS (1154), Queensland, *Mymaridae* and *Proctotrypidae* n. genn., n. spp. SZÉPLIGETI (1466), *Braconidae*, many spp. n.

Lepidoptera. BASTELBERGER (93), Cooktown, *Dysphania* sp. n. BETHUNE-BAKER (109), *Ogyris* monograph, 1 sp. n. HAMPSON (715), *Hadeninae* n. spp. HAMPSON (717), *Giaura* n. sp. LOWER (980), Austral. and Tasman., *Pyralidae* and *Tineidae*, 27 spp. n. LOWER (981), Austr. and Tasm., *Bombyces*, *Noct.*, *Geometr.*, *Pyral.*, 14 spp. n. LYELL, Victoria, *Ogyris genoveva*, Victorian Natural. xxi, p. 166. MEYRICK (1041), Tasmania, *Dryadula* sp. n. PERKINS (1151), Queensland n. fam., n. genn., n. spp. SWINHOE (1461), N. S. W., *Anthala* n. sp. TURNER (1509), Austral. and Tasmania, *Pyralidae*, 24 spp. n. WARREN (1574), *Geometridae*, 3 spp. n.

Diptera. BRUES (201), *Aphiochata*, 3 spp. n. COQUILLETT (367), Victoria, *Culex* sp. n. PERKINS (1153), *Pipunculus*, 26 spp. n. TERRY (1475), Queensland, *Baccha*, 2 spp. n. THEOBALD (1476), Queensland, *Sayomyia* n. sp. THEOBALD (1478), *Culicidae*, 1 sp. n. THEOBALD (1481), Queensland, n. g. *Culicidae*.

Aphaniptera. RAINBOW (1232), *Ceratophyllus* sp. n., *Ctenopsyllus musculi*. ROTHSCHILD (1301), Tasmania, 2 spp. n. ROTHSCHILD (1302), Tasmania, *Stephanocircus* sp. n.

Hemiptera. BERGROTH (97), Queensland, *Pentatomidae*, 5 spp. n. DISTANT (426), *Cicadidae*, 3 spp. n. DISTANT (427), W. Australia, n. g. *Cicadidae*. DISTANT (428), *Homoptera*, 7 spp. n. KIRKALDY (861), Brisbane, *Psyllidae* n. g. KIRKALDY (862), *Micronecta*, 2 spp. n. MELICHAR (1030), *Fulgoridae* n. g. SCHMIDT (1332), Queensland, *Ricanoptera* n. sp. SCHMIDT (1333), *Sephena* n. sp. SCHOUTEDEN (1340), *Coleotichus* sp. n. SCHOUTEDEN (1344), Victoria, *Graphosomini*, 2 spp. n. VAN DUZEE (1527), *Pentatomidae*, 13 spp. n.

Coccidae. GREEN (689), Victoria *Coccidae*, 5 spp. n. LEONARDI (936), *Mytilaspis* n. sp.

Trichoptera. ULMER (1518), *Macronema* n. sp.

Thysanura. ESCHERICH (525), *Acrotelsa* n. sp. FROGGATT, P. Linn. Soc. N. S. Wales xxx, p. 259, novelties.

Orthoptera. BOLÍVAR (130), Rockhampton, *Atractomorpha* sp. n.

BURR (219), *Gonolabis* sp. n. LEA (927), Tasmania, *Acrophylla* n. sp.

REHN (1237), Queensland, *Labia* n. sp. TEPPER (1473), Centr. Austral., *Mantidae* sp. n., *Phasmidae* 6 spp. n.

9. NORTH AMERICA. For Bahamas and Bermudas see

11. Antilles.

Insecta. ALFKEN (16), California, *Hym.* and *Lep.* and flowers visited. COCKLE, Canad. Ent. 1905, pp. 263, 264, Brit. Columbia, hibernating specimens. COCKERELL (350), Colorado, Col., *Coccidae*, *Apida*, novelties etc. GODMAN (670). LAURENT (920), Utah and Colorado trip. ENGELHARDT, Utah trip, Ent. News Philad. xvi, p. 91. LONGLEY,

pp. 125-127, Ent. News Philad. xvi, Chicago list. SHERMAN & BRIMLEY, N. Carolina expedition, J. E. Mitchell Soc. xx, pp. 134-136; captures, iid. t. c. pp. 141-144.

Coleoptera. BERNHAUER (103), *Borboropora* n. sp. BERNHAUER (105), California, *Aleocharides*, 8 spp. n. CASEY (285), *Paderini* n. gen., n. sp. CASEY (286), *Cychrus* n. sp., *Cryptophilus* etc., *Vanonus*, 2 spp. n. CHAGNON, Ent. News Philad. xvi, pp. 35, 36, Canadian *Cerambycidae*, 44 spp. CHITTENDEN (307), *Sphenophorus*, 10 spp. n. CHITTENDEN (308), *Sphenophorus*, 13 spp. n. FALL (538), Revision of *Ptinide*, numerous n. spp., n. gen. FALL (539), California, *Dytasia* sp. n. FALL (540), *Aphodius*, 2 spp. n. FALL (541), *Tachycellus* and *Glycerius*, 5 spp. n. FALL (542), *Buprest.*, *Elat.*, *Dynast.*, *Ceton.*, *Long.*, n. sp. HOUGHTON, Ent. News Philad. xvi, pp. 50, 51, Summit of Mt. Seward, list. HOUGHTON, Ent. News Philad. pp. 210-213, Delaware at light. KEEN, Canad. Ent. 1905, pp. 297, 298, North Brit. Columbia, list. KNAB (870), Illinois, *Donacia* n. sp. KNAB, Ent. News Philad. xvi, p. 230, *Galeruca pomonae*. KNAUS, Canad. Ent. 1905, pp. 348-352, Texas, list. OHAUS (1117), Florida, *Strigoderma* n. sp. PIC (1192), Mariposa, *Vrilleta* n. sp. SCHAEFFER (1323), N. Am. incl. Lower California, *Scydmæn.*, *Pselaph.*, *Parnidae*, *Buprest.*, *Cerambyc.*, *Chrysomel.*, *Meloidae*, *Curculionidae* spp. n. SCHAEFFER (1324), novelties, n. spp. *Coccinellidae*, *Erotylidae*, *Nitid.*, *Buprest.*, *Clerid.*, *Melolonth.*, *Ceram.*, *Chrysomel.*, *Lagruidae*, *Cistel.*, *Curc.* SCHAEFFER (1326), *Statira*, 2 spp. n. SKINNER (1408), Arizona, *Plusiotia*, *Cleridae*, *Ceram.* spp. n. SLOSSON, Ent. News Philad. xvi, pp. 67-71, Biscayne Bay, just one log. WEBB (1592), Washington, *Desmocerus* n. sp. WICKHAM (1629), *Cotalpa* n. sp. WICKHAM (1630), *Cicind.*, *Aphodius*, *Gysacutus*, *Hydnocera*, *Zonitis*, *Elaphidion* sp. n.

Hymenoptera. ANDRÉ (25), Arizona, *Rhopitromutilla* sp. n. BAKER (68), California and Nevada, *Odontophotopsis*, 5 spp. n. BAKER (66), *Photopsis* and *Chyphotes*, 13 spp. n. BRADLEY (166), Washington, *Deraulontus* n. sp. BRADLEY (168), *Ctenocephus*, 2 spp. n. BRADLEY (169), New York, *Ropronia* n. sp. BRUES (199), *Proctotrypidae*, 6 spp. n. CAMERON (274), Nevada and California, *Paratiphia*, 6 spp. n. CAMERON (275), California and Nevada, *Eumen.* and *Vesp.*, 6 spp. n., *Ichnemon.*, 10 spp. n., *Braseni* sp. n. COCKERELL (324), *Apidae*, 4 spp. n., *Proctotrypes* sp. n. COCKERELL (325), Rocky Mts., *Melissodes*, 9 spp. n. COCKERELL (326), *Apidae*, 3 spp. n. COCKERELL (333), Colorado, *Apidae*, 3 spp. n. COCKERELL (337), New Mexico and California, *Apidae*, 3 spp. n. COCKERELL (339), Colorado, *Apidae*, 3 spp. n. COCKERELL (340), Texas, *Perdita* n. sp. COCKERELL (342), *Dindusia*, 1 n. sp. COCKERELL (343), Wisconsin, *Nomada*, 2 spp. n. COCKERELL (344), Texas, *Apidae*, 3 spp. n. COCKERELL (345), California, 6 spp. n., *Andrena* and *Osmia*. COCKERELL (347), Arizona and New Mexico, *Melissodes*, 8 spp. n. COCKERELL (348), S. California, *Apidae*, numerous n. spp. COCKERELL (349), *Apidae*, 9 spp. n. COCKERELL, Psyche xii, p. 90, *Bombus medius* not N. American. GIRAULT (662), *Anaphes* n. sp. GIRAULT (663), *Paracentrobia*, *Gonatocerus*, from *Anthrenomus* eggs, sp. n. GIRAULT (668), *Myrmarida*, 2 spp. n. KIEFFER (847), *Gasteruption*, *Callirhytis*, 9 spp. n. KOHL (875), S. America, specially Chile, *Odynerus* and *Fossoria*, 18 spp. n. KONOW (884), Oran, *Emphytus* n. sp. KRIEGER (895), *Neotheronia* sp. n. LOVELL (977), Maine, *Halictus*, 4 spp. n. LOVELL (978), Maine, *Halictus*, 3 spp. n. LOVELL & COCKERELL (979), Maine, *Nomada*, 2 spp. n. NASON, Ent. News Philad. xvi, pp. 145-152, 168-172, Algonquin, Illinois, *Ichnemoniula*, extensive list. NASON, II *Alysia*, *Bracnoidae*, t. c. pp. 293, 298. PERKINS (1150), *Dryinidae* spp. n. ROBERTSON (1284), Illinois, *Apidae*, 5 spp. n. SWENK (1457), *Colletes*, 3 spp. n. TITUS

- (1497), *Megachile* sp. n. TITUS (1497), *Anthidium*, 2 spp. n. VIERECK (1549), Oregon etc., *Apida*, 3 spp. n. WHEELER (1621), *Formica* 5 spp. n. WHEELER (1624), New Jersey, *Formicidae*, Catalogue, 2 spp. n. WHEELER (1628), Mt. Washington, *Formicidae*.
Lepidoptera. BARNES (77), 5 spp. n. BROOKS, Ent. News Philad. xvi, p. 85, West Virginia Mountain *Rhopalocera*. BRUES, Ent. News Philad. xvi, p. 11, *Eubagis dionis*. DIETZ (419), *Amydriinae* and *Tineinae*, many spp. n. and genn. n. DIETZ (419), n. spp. DOD, Alberta, list, *Noctuidae* cont. from 1904, Canad. Ent. 1905, pp. 17-28. DYAR (472), Arizona, *Limacodidae*, 2 spp. n. DYAR (474), *Pyralidae*, 18 spp. n., *Tephroclystia* n. sp. DYAR (482), *Amblyscirtes* and *Megathymus* n. sp. DYAR (483), Nevada, *Onoocnemis* n. sp. ENGEL (517), *Xylina* n. sp. ENGEL (516), Pennsylvania, autumn and winter collecting. FERNALD (555), *Proteoteras* n. sp. FERNALD (556), *Tortricidae*, 3 spp. n. GIBSON, Ottawa *Sthenopsis thule*, Ottawa Natural. xix, pp. 117, 118. GIBSON, Canad. Ent. 1905, p. 88, *Simaethis fabriciana*, novelty. GRINNELL (697), California, *Satyruus*, *Thanaos* n. sp. GRINNELL (698), California, *Lycena* n. sp. GRINNELL, Ent. News Philad. xvi, pp. 134-137, butterflies of Mt. Wilson, S. California, 58 spp. HAMPSON (715), *Hadeninae* n. spp. HAMPSON (717), Florida, *Entelia* n. sp. HEATH, Canad. Ent. 1905, pp. 191, 192, Manitoba, season 1904. HEINDEL (735), *Acleris* n. sp. in gale of *Rhabdophaga*. KEARFOTT (829), *Polychrosis*, 3 spp. n. KEARFOTT (830), N. Carolina, *Tortricidae*, 9 spp. n. KEARFOTT (831), Assiniboia, *Pyralidae*, *Tortricidae*, *Tineidae* n. spp. KEARFOTT (832), *Tortricidae*, 3 spp. n. KEARFOTT (833), Ontario, *Aristotelia* sp. n. KEARFOTT, Canad. Ent. 1905, pp. 205-208, 253-256, 293-296, Manitoba, *Microlepidoptera* list. LYMAN (997), Canada, *Gortyna*, 2 spp. n. MCINTOSH, New Brunswick supplementary list, Bull. Soc. N. Brunswick cxxiii, pp. 355-357. MURTFELDT (1091), Minnesota, *Bucculatrix* n. sp. NASON, Ent. News Philad. xvi, pp. 1, 2, Illinois, *Pyral.*, *Tort.*, *Tin.*, short list. PEARSALE (1142), *Euchoeca* n. sp. SCHAEFFER (1325), Huachuca Mts., *Bombyces* list. SHAW, S. A., Ent. News Philad. xvi, pp. 323-327, Hampton, New Hampshire *Microlepidoptera*. SKINNER (1406), Arizona, *Crinodes* n. sp. SKINNER (1407), Arizona, *Megathymus* n. sp. SMITH (1415), *Noctuidae*, 10 spp. n. SMITH (1416), *Noctuidae* n. spp. SMITH (1417), *Noctuidae*, 35 spp. n. SOUTHER, Psyche xii, p. 96, Massachusetts, *Catocala*. WARREN (1572), Vancouver, *Sericosema* n. sp. WILLIAMS & GRINNELL (1633), Mt. Diablo, *Melicleptria* sp. n. WINN, Canad. Ent. 1905, p. 61, *Pieris brassicae*. WRIGHT (1643), California, *Rhopalocera*, illustrated work.
Diptera. ADAMS (6), *Oscinis*, 4 spp. n. ALDRICH (14), General catalogue. ALDRICH (15), *Dolichopida*, 10 spp. n. BAKER (61), California and Nevada, various families, 30 spp. n. BUENO, Ent. News Philad. xvi, p. 83, Kansas, *Mixogaster breviventris*. Washington, *Chironomida*, COCKERELL, p. 236, Entomologist 1905. COQUILLETT (366), *Nematocera*, 24 spp. n.; also *Ceratopogon*, 18 spp. n. COQUILLETT (369), New Mexico, *Limnophila* n. sp. DAECKE (386), New Jersey, *Chrysops*, 2 spp. n. DYAR (480), *Culex* n. sp. DYAR (481), *Culicidae*, novelty and some new localities. FELT (554), *Culex* n. sp. GROSSBECK (701), New Jersey, *Culex*, 2 spp. n. HERRICK, Ent. News Philad. xvi, pp. 281-283, Mississippi, *Culicidae*. HINE (749), *Chrysops* n. sp. JOHANSEN (820), Aquatic *Chironomida*, monograph, 38 n. spp. JOHANSEN (821), N. Carolina, *Bittacomorpha* n. sp. LUDLOW (985), California, *Taniorhynchus* n. sp. LUDLOW (986), Illinois, *Finlaya* sp. n. MCINTOSH (1020), New Brunswick, list. MOODIE (1061), Wyoming, *Syrphidae*, Arizona, *Milesia* n. sp. SWENK (1456), *Cuterebra*, 3 spp. n. WASHBURN (1577), Minnesota, *Diptera* of.
Aphaniptera. BAKER (53), *Ceratopsyllus* n. sp. BAKER (62),

- California, 2 spp. n. ROTHSCHILD (1299), *Ceratophyllus*, 17 spp. n. Hemiptera. BAKER (56), Nevada, *Gnathodus* n. sp. BAKER (59), California, *Eupteryx* n. sp. BAKER (60), California, *Macropsis* n. sp. BALL (69), Homoptera, 7 spp. n. BALL (70), *Phlepsius* etc., 5 spp. n. BRITTON (192), Connecticut, *Aleurodidae* spp. n. BUENO (209), *Notonecta* sp. n. BUENO (210), Georgia, *Hydrometra* n. sp. BUENO (213), *Ranatra* n. sp. COCKERELL (352), Colorado, *Pemphigus* sp. n. COCKERELL (353), Colorado, *Rhopalosiphum nymphææ*. HEIDEMANN (732), Washington, *Anasa* n. sp. HEIDEMANN (733), Plummer's Id., *Ceratocombidae* n. g. HEIDEMANN (734), N. York, *Capsida*, 1 sp. n. OSBORN (1125), *Fulgorida*, 5 spp. n. OSBORN (1126), Ohio, novelties, n. spp. SCHOUTEDEN (1344), Colorado, *Graphosomini* n. g. SHERMAN, Ent. News Philad. xvi, pp. 7, 8, North Carolina, *Aradidae*. UHLER (1515), Arizona, *Cicada* sp. n. *Coccidae*. COCKERELL (354), Colorado, 3 spp. n. COCKERELL (355), Colorado, *Pulvinaria* n. sp. COCKERELL (357), New Mexico, *Tachardisa* n. sp. YORK (1647), Ohio, *Aspidiotus* n. sp. *Trichoptera*. MORTON (1075), New York, *Hydroptilida*, 12 spp. n. ULMER (1518A), 4 spp. n. *Neuroptera*. BAKER (64), California, *Perla* n. sp., Nevada, *Berotha* n. sp. BANKS (71), N. Carolina, *Trichoptera*, *Panorpidae*, *Perlida* spp. n. CURRIE (383), Texas, *Brachynemurus* sp. n. NEEDHAM (1092), *Micromus* n. sp. *Perlida*. BANKS (73), 3 spp. n. NEEDHAM (1089), New York, n. g. *Perlida*. *Psocida*. RIBAGA (1264), California n. g. *Termitida*. DESNEUX (401), *Termes* n. spp. *Ephemerida*. NEEDHAM (1093). Revision with 5 spp. n. *Odonata*. OSBURN (1127), Brit. Columbia, annotated catalogue. WILLIAMSON, Rockcastle Riv., *Odonata*, Ohio Natural. v, pp. 309, 310. CURRIE, Kootenay district, Brit. Columbia, P. ent. Soc. Washington vii, pp. 16-20. *Thysanoptera*. HINDS (748), Florida, *Euthrips* sp. n. *Thysanura*. ESCHERICH (525), Texas, *Atelura* sp. n. SILVESTRI (1397), Texas, *Nicoletia*, 2 spp. n. *Collembola*. FRANKLIN (597), *Entomobrya* sp. n. *Orthoptera*. BAKER (63), Western side, list, *Oecanthus* n. spp. Lower California, *Acridiida*, 3 spp. n., see Centr. Amer., BOLIVAR. BRUNER (670), *Acridiida* spp. n. CAUDELL (287), Arizona, *Forficulida*, *Acridiida*, 6 spp. n. CAUDELL (289), California, *Melanoplus*, *Trimerotropis* n. sp. CAUDELL (290), Kansas, *Amblycorypha* n. sp. CAUDELL (291), Florida, *Aplopus* n. sp. CAUDELL (292), Indiana, *Bacunculus* sp. n. CAUDELL (294), S. W. Texas, *Anaplecta*, *Phasmid.*, *Acrid.*, 5 spp. n. CAUDELL, Ent. News xvi, pp. 216-219, Florida, annotated list. DAVIS (390), New Jersey, *Orchelimum*, *Conocephalus*, n. sp. REHN & HEBARD (1242), Florida, *Acridiida* 2 spp. n., *Locustida* 4 spp. n., *Gryllida* sp. n. STEVENSON, Ent. News Philad. xvi, p. 98, Montreal, *Blattida*. WALKER (1562), Ontario, *Locustida*, *Ceuthophilus* sp. n.

10. CENTRAL AMERICA (MEXICO to PANAMA incl.).

- Coleoptera*. BERNHAUER (103), Mexico, *Lispinus* n. sp. BERNHAUER (104), Costa Rica, *Brachydirus* sp. n. CANEY (285), incl. Lower California, *Paderini* n. gen., n. spp. CASEY (286), Chihuahua, *Carabus* n. sp. CHAMPION (670), *Circulionida*, *Cryptorhynchides*, many novelties. FALL (538), Lower California, *Pinidae* n. spp. FAUVEL (546), *Oxytelus* sp. n. HOPKINS (758), Mexico, *Scolytida*, 10 spp. n.

LÉVEILLÉ (947), Mexico, *Corticotomus* sp. n. OHAUS (1117), *Rutelidae*, 7 spp. n. PANGELLA (1135), Costa Rica, *Passalidae*, 3 spp. n. PIO (1188), Mexico, *Eupactus* n. sp. SHARP (670), *Chelonarium*, 4 spp. n., *Rhipidandrus*, 2 spp. n. WATERHOUSE (1590), Mexico, *Halecia* sp. n. WEISE (1600), Mexican *Hispidae*, list of, with 5 spp. n. ZANG (1665), *Passalidae*, 2 spp. n. ZANG (1667), Chiapas, *Proculus* n. sp. Lower California, see N. Amer. Col., SCHAEFFER.

Hymenoptera. ANDRÉ (25), *Rhoptromutilla* n. sp. BRUES (199), Mexico, *Anteon* n. sp. CAMERON (242), Panama, n. g. *Larridae*. CAMERON (250), Mexico, *Masariidae*, *Fossoria*, *Ichn.*, *Bracon.*, *Oxyura*, 30 spp. n. CAMERON (251), Mexico, *Fossoria*, 8 spp. n., *Odynerus* and *Agrypus* n. sp., *Braconidae*, 5 spp. n., *Heptamerocera* sp. n. CAMERON (252), Mexico, *Odynerus*, 4 spp. n. CAMERON (272), *Fossoria*, *Ichneumon.*, *Bracon.*, *Proctotryp.*, *Chalcid.*, 52 spp. n. CAMERON (273), Nicaragua, *Mutillidae*, *Tiphidae*, *Eumenidae*, *Ichneumonidae*, 8 spp. n. COCKERELL (324), Mexico, *Prosopis* sp. n. COCKERELL (341), Oaxaca, *Triepeolus* n. sp. EMERY (494), Costa Rica, *Camponotus* sp. n. KIEFFER (841), Costa Rica, n. g. *Diapriinae*. KRIEGER (895), *Neotheronia* sp. n. MAYR (1017), Mexico, *Andricus* sp. n. MOCSARY (1055), Costa Rica, *Rhyssa* 3 spp. n. PÉREZ (1147), Mexico, *Centris*, *Calioxya* spp. n. SZÉPLIGETI (1465), Costa Rica, n. g. *Ophioninae*.

Lepidoptera. DOGNIN (438), Costa Rica, *Nacoleia* n. sp. DOGNIN (439), San Salvador, *Dasylophia* n. sp. DOGNIN (442), San Salvador, *Adelocephala* n. sp. DYAR (472), *Limacodidae*, 7 spp. n. HALL, *Rhopalocera*, Entomologist 1905, pp. 228-231. HAMPSON (715), *Hadeninae* n. spp. HAMPSON (716), *Ianthrene* sp. n. HAMPSON (717), Panama, *Ingura* n. sp. and n. g. *Noctuidae*. PACKARD (1131), Jalapa, *Adelocephala* sp. n. SCHAUS (1329), *Bombyces*, Mexico, 8 spp. n., Panama, 2 spp. n., Costa Rica, 1 sp. n. STICHEL & RIFFARTH (1452), *Heliconidae*, localities. THIEME (1490), Mexico, *Pedaliodes* sp. n. WARREN (1571), *Erosia* sp. n. and *Geometridae*, 3 spp. n. WARREN (1572), *Epitem.*, 2 spp. n., *Geometrid.* many spp. n.

Diptera. ALDRICH (14), General Catalogue. COQUILLETT (366), Mexico, *Ceratopogon*, 2 spp. n. COQUILLETT (371), Mexico and Costa Rica, *Culicidae*, 3 spp. n. HINE (749), Guatemala, *Chrysopa*, 3 spp. n.

Hemiptera. BAKER (56), Guatemala and Nicaragua, *Eugnathodus*, 5 spp. n. BAKER (58), Nicaragua, *Erythria*, 4 spp. n. BAKER (58), Nicaragua, *Typhlocybini* n. g. BAKER (59), *Typhlocybini*, 11 spp. n. BAKER (60), Nicaragua, *Macropsis* n. sp. BREDDIN (184), Costa Rica, *Edessa* n. sp. FOWLER (670), *Issidae*, *Dephacidae*, spp. n. KIRKALDY (861), Mexico, *Trioxa* n. sp.

Trichoptera. ULMER (1518), Mexico, *Hydropsyche* sp. n. ULMER (1518A), Mexico, *Wormaldia* n. sp.

Neuroptera. BAKER (64), Nicaragua, *Megalomus* n. sp.

Odonata. WILLIAMSON (1635), Account of trip.

Orthoptera. BAKER (63), Nicaragua, *Bostra* and *Cyrtoxipha* n. sp., *Oecanthus* n. sp., *Heterocotis* (sic) n. sp. BOLÍVAR (130), Lower California, *Orthacrine*, 3 spp. n. BRUNER (206), Costa Rica, *Proscopidae*, 2 gen. n. BRUNER (670), *Acrididae* spp. n. BURR (219), Guatemala, *Forficula* sp. n. REHN (1238), Costa Rica, *Acrididae*, 18 spp. n. REHN (1239), Costa Rica, list with *Blattidae*, *Phasmidae*, *Locustidae*, *Gryllidae* n. spp.

11. ANTILLES, including BERMUDAS, BAHAMAS, BARBADOS. For Trinidad see 12.

Coleoptera. BERNHAUER (103), Grenada, *Thinobius*, *Parorus* n. sp. OHAUS (1117), S. Domingo, *Pelidnota* n. sp. PIO (1175), Gaudeloupe,

Petalium sp. n. PIC (1182), Cuba, *Eupactus* n. sp. PIC (1192), Guadeloupe, n. g. *Dorcatomini*. SCHAUFUSS (1328), Guadeloupe, *Stephanoderes* sp. n.

Hymenoptera. WHEELER (1620), Bahamas and Antilles, *Formicidae*, lists, n. spp.

Lepidoptera. DRUCE (456), Cuba, *Perrhanæa* sp. n. HAMPSON (715), Jamaica, *Hadeninae* n. sp. HAMPSON (716), Jamaica, *Napata* n. sp., *Eucereon* n. sp., Cuba, *Cincia* n. sp. HAMPSON (717), Cuba, *Eutelia* n. sp. SCHAUS (1329), Cuba, *Robinsonia*, Jamaica, *Tolyte* sp. n. WARREN (1568), Grenada, *Hemioplinis* sp. n. WARREN (1572), *Geometridæ* n. spp.

Diptera. ALDRICH (14), General Catalogue. COQUILLETT (366), Cuba, *Ceratopogon* sp. n. COQUILLETT (368), Barbados, *Cecidom.* n. sp. COQUILLETT (370), Cuba, *Thelavrodes* n. sp. COQUILLETT (371), Cuba, S. Domingo, St. Thomas, Guadeloupe, *Culicida*, 4 spp. n. GRAHAM (684), Jamaica, *Culicida* spp. n. JOHANSEN (820), St. Vincent, *Chironomus* sp. n. LUDLOW (986), Porto Rico, *Culex* sp. n. THEOBALD (1484), Jamaica, Handbook of *Culicida*, 1 sp. n.

Thysanura. ESCHERICH (525), *Acrotelsa* n. sp.

Orthoptera. CAUDELL (293), Porto Rico, *Ischnoptera* n. sp. MORSE (1072), Bahamas, *Acridida*, *Locustida*, *Gryllida*, 6 spp. n. REHN (1937), Cuba, *Forficula* n. sp. REHN (1941), Lesser Antilles incl. Barbados, novelties, *Orphulella* sp. n.

12. SOUTH AMERICA, including TRINIDAD.

Coleoptera. BERNHAUER (103), *Staphylinida*, 7 spp. n. BERNHAUER (104), *Staphylinida*, 17 spp. n. BOURGEOIS (151), Ecuador, *Lycida*, 1 sp. n. BRÉTHES (188), Tucumán, *Cyclocephala*, 2 spp. n. BRÉTHES (190), *Lathridiida* n. g. FAIRMAIRE (535), Argentina, *Heteromera*, 39 spp. n. FAUVEL (545), Argentina, n. tribe *Staphyl.* FAUVEL (546), *Staphylinida* spp. n. GOUNELLE (679), Tucumán, *Coremia* n. sp. GOUNELLE (680), GOYAZ, *Parozodes* sp. n. HAGEDORN (713), Northern S. America, *Scolytida*, 8 spp. n. HORN (762), *Tetracha* n. sp. HORN (765), Peru, *Odontochila* sp. n. HORN (772), Amazons, *Tetracha* n. sp. *Odontochila* n. sp. KERREMANS (835), GOYAZ, *Buprestida* n. g. LÉVEILLÉ (957), *Trogositida*, 11 spp. n. LÉVEILLÉ (948) *Trogositida*, 2 spp. n. LÉVEILLÉ (949), Brazil, *Lophocateres* sp. n.

LEWIS (954), *Omalodes*, 2 spp. n. LEWIS (954), Bahia, *Histerida* n. g. MOSER (1076), Bolivia, *Blasius* n. sp. OHAUS (1116), Chile and Ecuador, *Anoplognathides*, 4 spp. n. OHAUS (1117), *Rutelida*, 39 spp. n. OHAUS (1118), *Spodochlamys*, 4 spp. n., *Anatista* sp. n.

OLIVIER (1122), *Macrolampis*, 9 spp. n. OLIVIER (1123), Bolivia, Brazil, *Photuris*, 3 spp. n. PANGELLA (1136), Paraguay and Argentina, *Passulida*, 4 spp. n. PIC (1170), Peru, *Anthicus*, 3 spp. n. PIC (1175), Brazil, *Petalium* n. sp. PIC (1176), Brazil, *Hylophilus* 7 spp. n. PIC (1182), *Astylus*, *Cathorama*, *Priotoma* n. sp. PIC (1188), *Priotoma* n. sp., *Lanthanus* n. sp. SPAETH (1430), *Cassidida*, 14 spp. n. STIERLIN, Ann. Soc. ent. Belgique 1905, p. 140, S. Patagonia, *Otiorynchus antarcticus*. THERY (1489), Guyaquil, *Ectinogonia* sp. n. VACHAL (1526), Chile, *Apidae* n. g. WATERHOUSE (1590), *Buprestida*, 6 spp. n. WEISE (1609), Bolivia, n. g. *Cassidida*. ZANG (1665), Peru and Bolivia, *Passulida*, 2 spp. n. ZANG (1667), Venezuela, *Verres* n. sp.

Hymenoptera. ANDRÉ (25), *Mutillida*, 7 spp. n. BRAUNS (176), Brazil, *Meostenus*, 2 spp. n. BRÉTHES (187), La Plata, *Ichneumonida*, 4 spp. n., *Tetrastichus* n. sp. BRÉTHES (188), Tucumán, *Iphiaulax*

- n. sp. BUTSSON (230), *Odynerus* sp. n. BUTSSON (231), Bahia, *Charterginus* sp. n. CAMERON (251), *Iphiaulax*, *Agathis*, 6 spp. n. COCKERELL (332), Ega, *Augochlora* sp. n. DUCKE (460), Pará, *Cleptes*, 2 spp. n. DUCKE (461), Social *Vespida*, n. genn., n. spp. DUCKE (462), Lower Amazona, *Zethus*, 3 spp. n. DUCKE (463), Obydos, *Melissa* sp. n. EMERY (493), Ecuador, *Ectatomma* sp. n. EMERY (494), *Camponotus*, 9 spp. n. ENDERLEIN (499), *Braconida*, 4 spp. n. ENDERLEIN (502), Peru and Bolivia, *Evaniida*, 8 spp. n. FOREL (591), *Formicida*, 8 spp. n. FRIESE (605), Chile, *Megachile* and *Colletes*, 10 spp. n. IHERING (800), Brazil, *Vespida*, monograph, 3 spp. n. KIEFFER (841), Brazil n. g. *Dryinae*. KONOW (884), S. Am. incl. Chile, *Tenthredinida*, 6 spp. n. KRIEGER (895), *Neotheronia*, 42 spp. n. MOCSÁRY (1055), *Rhyssa*, 7 spp. n. SCHROTTKY (1350), Argentina, Uruguay, Paraguay, Catalogue. SCHROTTKY (1351), Paraguay, *Apidae*, 5 spp. n. SCHULZ (1359), *Trigonalida*, *Diploptera*, *Meliponides* n. sp. SZÉPLIGETI (1465), *Ophionina*, 3 spp. n. *Lepidoptera*. CLARK (321), Venezuela, Margarita isld., *Rhopalocera*. DOGNIN (438), *Pyralida*, *Tortricida*, *Tineida*, 61 spp. n. DOGNIN (439), *Notodont.*, 3 spp. n., *Cossida*, 2 spp. n., *Lasiocamp.*, 3 spp. n. DOGNIN (440), Peru, *Eucereon*, *Ctenucha*, *Cymbalophora*, *Saturnia*, sp. n. DOGNIN (441), Peru and Colombia, *Hydrias*, *Perophora*, *Edebeasa* spp. n. DOGNIN (442), Argentina, *Adelocephala* n. sp. DRUCE (453), *Noctuida*, 10 spp. n. DRUCE (454), Venezuela and Peru, *Syntomida*, *Arctida*, 26 spp. n. DRUCE (455), N. W. S. Amer., *Notodontida*, 7 spp. n. DYAR (472), *Limacodida*, n. genn., n. spp. GODMAN (671), *Satyrida*, 13 spp. n. HAENSCH (712), new *Ithomiinae*. HAMPSON (715), Brazil, Patagonia etc., *Hadenina* n. spp. HAMPSON (716), third Suppl. to Cat. Lep. Phal., many spp. n., *Syntom.*, *Arct.*, *Noct.* HAMPSON (717), *Noctuida* n. spp. HAMPSON (718), Amazona, n. g. *Chrysaugina*. KAYE (828), Brit. Guiana, *Napeogenes* and *Hyrmina* sp. n. ROTHSCHILD (1305), Bolivia, *Papilio* sp. n. SCHAUS (1329), *Bombyces*, about 400 n. spp. STICHEL & RIFFARTH (1452), *Heliconiida*, localities. THIEME (1490), *Pedaliodes*, 40 spp. n. THIERRY-MIEG (1493), *Geometrida*, 7 n. spp., *Noctuida* n. g. WARREN (1568), Guiana, *Thyridida*, 8 spp. n. WARREN (1571), chiefly Peru, *Geometrida*, *Uran.*, *Thyrid.*, 68 spp. n. WARREN (1572), *Thyrid.* sp. n., *Epiplemid.*, 3 spp. n., *Geometrid.* many spp. n. WEEKS (1594), Bolivia, lists, *Rhopalocera*, account of trip. *Diptera*. ALDRICH (15), Brazil, *Psilopodinus*, 2 spp. n. BECKER (89), Ile des États, n. g. *Ephydrida*. BEZZI (114), *Empida*, catalogue, many spp. n. BRÉTHES (188), Tucuman, *Leptogaster* n. g., *Asilide*, *Baccha*, *Euceta* n. sp. BRUES (200), Peru, *Phorida*, 5 spp. n. COQUILLETT (371), Trinidad, *Culicida*, 2 spp. n. GOELDI (672), Brazil, *Chironomus* n. spp., *Hematomyidium* n. g., *Simulium* n. sp. HOLMGREN (756), Peru, *Termitomastida*, 2 spp. n. RIBEIRO (1265), Minas Geraes, *Nycteribiida* n. g. RÜBSAAMEN (1316), Brazil and Peru, *Cecid.*, galls etc., etc., n. spp. SPEISER (1437), *Lipoptena* sp. n. THEOBALD (1477), *Culicida*, 2 spp. n. THEOBALD (1478), Brit. Guiana, *Culicida*, 2 spp. n. *Aphaniptera*. ENDERLEIN (508), Argentina, *Malucopsylla* n. sp. ROTHSCHILD (1301), Brazil, *Pulex* sp. n. *Hemiptera*. SCHMIDT (1333), *Fulgorida*, 3 spp. n. SCHMIDT (1332), Ecuador, *Susula* n. sp. BRÉTHES (188), Tucumán, *Jassus* n. sp. BREDDIN (184), *Pentat.*, 9 spp. n. BERGROTH (99), *Coreid.*, *Reduv.*, 5 spp. n. MONTANDON (1058), *Ranatra*, 3 spp. n. MONTANDON (1059), *Cryptocerata*, 3 spp. n. KIRKALDY (859), Peru, *Tingida*, 3 spp. n. JACOBI (807), Peru, *Jassida*, 50 spp. n. HORVÁTH (774), Peru, *Parajalysus*, 2 spp. n. DISTANT (429), Argentina, n. g. *Tibicininae*. DISTANT (427), Rio Salado, *Derotettix* n. sp. DISTANT (426), Peru and

- Chile, *Cicadida*, 2 spp. n. DISTANT (424), *Cicadida*, 2 spp. n.
 DISTANT (423), *Cicadida*, 9 spp. n. DISTANT (430), Bolivia, *Pulgoridae*,
 2 spp. n. DISTANT (425), Peru and Bolivia, *Cicadida*, 3 spp. n.
Coccida. COCKERELL, Paraguay, *Lecanium perlatum*, Nature lxxii,
 p. 397. COCKERELL (338), Paraguay and Chile, *Coccida*, 3 spp. n.
Trichoptera. ULMER (1517), 26 n. spp. ULMER (1518 A), 11 n. spp.
 ULMER (1518), Patagonia, *Limnophilus*, n. sp.
Perlida. ENDERLEIN (504), Tierra del Fuego, 3 n. spp.
Psocida. ENDERLEIN (497), Argentina, n. g. aff. *Troctes*.
Odonata. FÖRSTER (595), Paraguay, *Libellulidae*, 3 spp. n. NEEDHAM
 (1090), Brazil, n. g. *Libellulina*.
Thysanura. ESCHERICH (525), Colombia and Blanquille, *Lepismatidae*,
 2 spp. n. SILVESTRI (1394), Chile, *Thysanura*, 3 spp. n. SILVESTRI
 (1397), Venezuela, *Nicoletia* n. sp.
Orthoptera. BOLÍVAR (128), Myrmecophilous *Blattida*, n. genn., n. spp.
 BOLÍVAR (130), Pernambuco, n. g. *Atractomorphina*. BORELLI (145),
 Paraguay, *Forficulidae*, 5 spp. n. BRUNER (205), Paraguay, *Acridiida*,
 2 spp. n. BURR (219), *Forficulidae*, 2 spp. n. REHN (1237), Peru
 and Colombia, *Forficulidae*, 3 spp. n. REHN (1240), Paraguay, n. g.
Acridiida.

PALÆO-ENTOMOLOGY.

- Table of the periods of first appearance of fossils, HANDLIRSCH (723).
 Insects in copal, extraction of, their state of preservation, PROWAZEK
 (1219).
Diptera and *Hymenoptera* from Madagascar Copal, see MEUNIER (1040)
 and Systematic.
 Monograph of *Psychodida* in Baltic amber, MEUNIER, Ann. Mus. Hungar.
 iii, pp. 235-255, pls. vi, vii.

Coleoptera.

- ZANG, in SB. Ges. naturf. Berlin, 1905, describes the following *Col.* from
 Baltic amber.
Platycerus berendti, p. 199, pl. f. 1, n. sp.
Aphodius succini, p. 204, pl. f. 5, n. sp.
Pogonocherus jackeli, p. 233, pl. f. 5, n. sp.
Nothorrhina granulicollis, p. 236, pl. f. 1, n. sp.
Dorcaschema succineum, p. 240, pl. f. 6, n. sp.
Strangalia berendtiana, p. 243, pl. f. 4, n. sp.
 Re-examination of Berendt's determinations of *Longicornia* in Baltic
 amber, ZANG, pp. 232-245, 1 pl., t. c.

Hymenoptera.

- Dimorphomyrmex theryi*, Baltic amber, EMERY, p. 188, Bull. Soc. ent.
 France 1905, n. sp.
Gonatocerus henneberti, Baltic amber, MEUNIER, p. 2, Miscell. ent. xiii,
 n. sp.
Limacis armata, Baltic amber, id. p. 3, t. c. n. sp.

Diptera (*Cecidomyiidae*).

- Meunieria* n. g. for *Miastor* of amber, KIEFFER, p. 408, Ann. Soc. Bruxelles
 xxviii.

Diptera (*Psychodidae*).

- Palæosycozax* n. g. *tertiaria* n. sp., Baltic amber, MEUNIER, p. 50, Miscell.
 ent. xiii.

- Pericoma formosa*, p. 243, *speciosa*, p. 244, Baltic amber, MEUNIER, t. c. n. spp.
Psychoda eocenica, Baltic amber, MEUNIER, p. 246, t. c. n. sp.
Trichomyia pulchra, p. 246, *formosula*, *eocenica*, p. 247, *diversa*, *tenax*, p. 248, *procera*, p. 249, *nova*, *distincta*, p. 250, Baltic amber, MEUNIER, t. c. n. spp.
Diplonema crassicornis, Baltic amber, MEUNIER, p. 251, *Anna Maa Hungar* iii. n. sp.
Sycorax tumultuosa, *prompta*, Baltic amber, MEUNIER, p. 253, t. c. n. spp.
Eatonisca n. g. *tertiaria* n. sp., Baltic amber, MEUNIER, p. 253, t. c. n. sp.
Phlebotomus tipuliformis, Baltic amber, MEUNIER, p. 254, t. c. n. sp.

Diptera (*Mycetophilidae*).

- MEUNIER, ADL. Soc. Bruxelles, gives a table of fossil *Mycetophilidae*, pp. 93-100, and describes the following new forms from Baltic amber :
Mycetobia calida, p. 101, t. c. n. sp.
Macrocera longicornis, *abundans*, p. 102, *ciliata*, *filiformis*, p. 104, *elegantissima*, p. 105, t. c. n. spp.
Platyura kunowi, p. 107, *seralli*, p. 108, *graciosa*, p. 108, *moniliformis*, p. 110, *ectorii*, p. 111, *mitis*, *distincta*, p. 112, *corruptuloides*, *corruptulina*, p. 114, t. c. n. spp.
Asindulum longipalpis, p. 115, *girachneri*, *curvipalpis*, p. 116, *elegantulus*, p. 117, t. c. n. spp.
Sciophila helmi, p. 124, *subquadrata*, *crassicornis*, p. 125, t. c. n. spp.
Empheria minor, p. 126, *major*, p. 127, t. c. n. spp.
Polylepta filipes, p. 127, t. c. n. sp.
Ceroplatus major, p. 183, t. c. n. sp.
Palaeompalia crassipes, p. 128, *brongniarti*, *succini*, p. 129, *mutabilis*, *broeckii*, p. 130, *cylindrica*, p. 184, t. c. n. spp.
Empalia subtriangularis, p. 131, t. c. n. sp.
Loewiella indistincta, *incompleta*, p. 132, *tenebrosa*, *ciliata*, p. 133, *murronata*, *asinduloides*, p. 134, *empalioides*, p. 135, t. c. n. spp.
Lasiosoma curvipetiolata, p. 135, t. c. n. sp.
Tetragoneura elongatissima, *elongata*, p. 136, *rectangulata*, *glabra*, p. 137, *borussica*, *gracilis*, p. 138, *minuta*, p. 139, t. c. n. spp.
Syntemna elongata, *pinites*, p. 150, *compressa*, p. 151, *subcylindrica*, p. 152, *subquadrata*, *sciophiliformis*, p. 153, t. c. n. spp.
Palaeoannaclina n. g. *curvipetiolata*, p. 154, *distincta*, *affinis*, p. 155, MEUNIER, t. c. n. spp.
Proannaclina n. g. *giebeli*, *gibbosa* n. spp., MEUNIER, p. 156, t. c.
Anaclileia n. g. *anacliniformis*, p. 157, *sylvatica*, *guznigairis*, p. 158, *dissimilis*, p. 159, MEUNIER, t. c. n. spp.
Palaeophthiria n. g. *aberrans* n. sp., MEUNIER, p. 160, t. c.
Archaeoletina n. g. *tipuliformis* n. sp., MEUNIER, p. 160, t. c.
Palaeoboletina n. g. *grandis*, p. 161, *elongatissima*, p. 162, n. spp., MEUNIER, t. c.
Proboletina n. g. *syntemniformis* n. sp., MEUNIER, p. 162, t. c.
Boletina anaceliniformis, p. 163, *onstaleti*, *pilosus*, *ambriatus*, p. 164, *hirtus*, p. 165, *hirtella*, *subhirta*, p. 166, *conspicua*, *sercata*, p. 167, t. c. n. spp.
Proneoglyphyoptera n. g. *eocenica* n. sp., MEUNIER, p. 169, t. c.
Neoglyphyoptera curvipetiolata, p. 170, *longipetiolata*, p. 170, *crassipalpis*, *longipalpis*, p. 171, t. c. n. spp.
Palaeodocosa n. g. *brachypezoides* n. sp., MEUNIER, p. 172, t. c.
Docosa petiolata, p. 173, *curvis*, *subtilis*, p. 174, t. c. n. spp.
Allodia fungicola, *succinea*, p. 175, *separata*, *brevicornis*, p. 176, t. c. n. spp.
Brachycampa extincta, p. 177, *antiqua*, *procera*, *umentosa*, p. 178, t. c. n. spp.
Palaeotrichonta n. g. *brachycamptiles* n. sp., MEUNIER, p. 179, t. c.

Trichonta brachycamptoides, p. 179, *crassipes*, p. 180, t. c. n. spp.

Phronia ciliata, t. c. p. 180, n. sp.

Palaeopicypta n. g. *longicalcar* n. sp., MEUNIER, p. 181, t. c.

Mycothera cordyliformis, *agilis*, p. 182, t. c. n. spp.

Dynatosoma crassicornis, p. 172, t. c. n. sp.

Azana rarissima, p. 184, t. c. n. sp.

Aenemia bolsiusi, p. 185, t. c. n. sp.

Diptera (Chironomidae).

MEUNIER, in the same work, Ann. Soc. Bruxelles xxviii, describes the following new *Chironomidae* from Baltic amber

Chironomus vagabundus, p. 209, *tenebrosus*, *elegantulus*, p. 210, *umbraticus*, *meticulosus*, p. 211, *umbrosus*, *inglorius*, p. 212, *subobscurus*, *uliginosus*, p. 213, *tenebricosus*, *abietarius*, p. 214, *paludosus*, *uliginosus* (sic), p. 214, *lacunus*, *lacus*, p. 216, t. c. n. spp.

Cricotopus crassicornis, p. 216, *antiquus*, p. 217, *amniculus*, *alluvionis*, p. 218, *pygmaeus*, *delicatus*, p. 219, *robustus*, *permutabilis*, p. 220, *variabilis*, *pulchellus*, p. 221, *ambiguus*, p. 222, *dilapsus*, *abiegnus*, p. 223, *paganus*, *insolitus*, p. 224, *saltuosus*, *coniferus*, p. 225, *extinctus*, *nomorivagus*, p. 226, *minutissimus*, *minutus*, p. 227, t. c. n. spp.

Tanytarsus insularis, p. 228, *vulpis*, *maritimus*, p. 229, t. c. n. spp.

Eurycnemus vulgaris, p. 229, *stagnum*, *tenellus*, p. 230, *appendiculatus*, *hyalinus*, *pilosellus*, p. 231, t. c. n. spp.

Campocladius flexuosus, *sinuosus*, p. 232, t. c. n. spp.

Tanypus fusiformis, p. 233, *porrectus*, *compactus*, p. 234, *subrotundatus*, *eridanus*, p. 235, *longicornis*, *parvus*, p. 236, *filiformis*, p. 237, t. c. n. spp.

Ceratopogon turbinatus, *unculus*, p. 238, *piriformis*, *prominulus*, p. 239, *eminens*, *defectus*, *speciosus*, p. 240, *flagellus*, p. 241, *elongatus*, *cothurnatus*, p. 242, *lacus*, p. 243, *falcatus*, p. 244, *sinuosus*, *spinosus*, p. 245, *forcipiformis*, *obtusus*, *gracilicornis*, p. 247, t. c. n. spp.

Diptera (Muscidae acal.).

Agromyza minuta, p. 90, *aberrans*, p. 91, Baltic amber, MEUNIER, Ann. Soc. Bruxelles xxix, n. spp.

Psocidae.

Amphientomum colpolepis, p. 577, *leptolepis*, p. 580, Prussian amber, ENDERLEIN, Zool. Anz. xxix, n. spp.

III. SYSTEMATIC.

N.B.—The reference numbers collected under the headings of the various groups refer to "Titles" on pp. 5-86, and are intended to give, in each case, a complete list of all memoirs containing anything of importance in connection with the group.

Table of affinities of winged Insects, VOSS, Zeitschr. wiss. Zool. lxxviii, p. 736.

List of Insects that have been found in copal, MEUNIER, pp. 204-209, Rev. Sci. Bourbonnais 1905.

Introduction to N. American entomology, KELLOGG (834): includes some general chapters, e.g. Insects and flowers, Insects and disease, Colour and its uses.

Malpighian tubes, no. of in the Orders, structure and function, VENEZIANI (1536).

(A.) COLEOPTERA.

- Corrections to Munich Cat. in relation to Klug's nomenclature in Insekten Madagaskar's, GEBIEN (645).
 Wing-nervures of *Coleoptera*, KEMPERS, Tijdschr. Ent. Verlag, pp. li-lv.
 Defensive glands, BORDAS (142).
 Morphology of abdomen ♀, WANDOLLECK (1566).
 Anomalous larva in *Yucca*, California, BARKER, pp. 117-121, cuts, P. ent. Soc. Washington vii.

CICINDELIDÆ.

[Memoirs relating to *Cicindelidæ*: HEATH (731), HORN (762-772), MAINDRON & FLEUTIAUX (1002), SLOANE (1411), WICKHAM (1630).]

Cicindelidæ of S. India, habits etc., MAINDRON & FLEUTIAUX, Ann. Soc. ent. France 1905, pp. 1-19.

A list of *Cicindelidæ*, with var. n., HORN (762).

Cicindelidæ of Western France, HOULBERT & MONNOT (785).

Herbivorous [?] *Cicindelidæ*, HORN, p. 172, Deutsche ent. Zeitschr. 1905.

Larvæ burrowing in stems and twigs, SHELFORD, p. lxxii, P. ent. Soc. London 1905.

Cicindela japonica varr. p. 185, *germanica*, var. p. 186, BEUTHIN, Soc. ent. xix; *C. reducta* Motsch. = (*pudibunda* Boh.), *C. chersonensis* Motsch. is small *sahlbergi*, HORN, p. 296, Deutsche ent. Zeitschr. 1905; *C. peringueyi immaculipennis* subsp. n., HORN, p. 151, Deutsche ent. Zeitschr. 1905; *C. hybrida* and Siberian forms, validity of, *C. transbaicalica magnifica* subsp. n., p. 156, HORN, pp. 153-159, Deutsche ent. Zeitschr. 1905; *C. viridilabris* var. n. *fuscocuprascens*, p. 60, *belli* var. n. *umbropolita*, p. 61, HORN, Deutsche ent. Zeitschr. 1905; *C. discrepans*, pl. 1, f. 3, *rugosiceps*, f. 4, *malabarica*, f. 5, p. 14, MAINDRON & FLEUTIAUX, Ann. Soc. ent. France 1905.

C. hafigeri, E. Africa, HORN, p. 281, Stettin ent. Zeit. lvi; *C. hauserana*, p. 143, *ocellifera*, p. 144, E. Africa, HORN, Deutsche ent. Zeitschr. 1905; *C. bellana*, Kurrachea, HORN, p. 63, Deutsche ent. Zeitschr. 1905; *C. excinlabris*, New Guinea, HORN, p. 160, Deutsche ent. Zeitschr. 1905; *C. hackeri*, p. 229, *doddi*, p. 230, *plebeius*, p. 232, *curvicolis*, p. 233, Australia, SLOANE, P. Linn. Soc. N. S. Wales xxx; *C. parwana*, Utah, WICKHAM, p. 165, Canad. Ent. 1905 : n. spp.

Collyris saundersi continentalis subsp. n., HORN, p. 295, Deutsche ent. Zeitschr. 1905.

C. planifrons, Ceylon, p. 293, *maindroni*, Travancore, p. 294, *contracta*, Siam, p. 295, HORN, Deutsche ent. Zeitschr. 1905, n. spp.

Derocrania longesulcata, pl. i, f. 1, p. 8, MAINDRON & FLEUTIAUX, Ann. Soc. ent. France 1905.

Euryoda paradoxa, pl. i, f. 2, p. 9, MAINDRON & FLEUTIAUX, t. c.

Megacephala, spp. doubted, *M. regalis baby* subsp. n., HORN, p. 159, Deutsche ent. Zeitschr. 1905.

M. steinkelli, S. America, HORN, p. 51, Index Cicind., n. sp.

Odontochila figuierana, E. Africa, p. 278, *cicindeloides*, Madagascar, p. 279, HORN, Stettin ent. Zeit. lvi; *O. curvipennis*, Amazona, HORN, p. 230, Notes Leyden Mus. xxv; *O. eurytarsipennis*, Peru, HORN, Deutsche ent. Zeitschr. 1905, p. 148 : n. spp.

Ophryodera distanti, Angola, HEATH, p. 97, f. 1, Entomologist 1905, n. sp.
Orygonia, characters, with notes on *Odontochilini*, HORN, pp. 145-148, Deutsche ent. Zeitschr. 1905.

- Pogonostoma septentrionale simplex* subsp. n., FLEUTIAUX, p. 65, *Deutsche ent. Zeitschr.* 1905.
P. fleutiauxi, Madagascar, HORN, p. 276, *Stettin ent. Zeit.* lvi, n. sp.
Tetracha carolina in Baltic amber, ZANG & HORN, SB. Ges. naturf. Berlin 1905.
T. lateralis Amazons, p. 219, HORN, *Notes Leyden Mus.* xiv, n. sp.
Therates dohertyi, Assam, HORN, p. 277, *Stettin ent. Zeit.* lvi, n. sp.
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CARABIDÆ.

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- Eulathrobium* n. g. for *L. grande*, Lec., CASEY, p. 114, t. c.
- Eustenia* n. g. near *Falagria*, *aspera*, Java, p. 145, *opacicolle*, Burma, p. 146, n. spp., FAUVEL, Rev. Ent. franc. 1905.
- Gastrolobium* n. g. for part of *Cryptobium*, p. 31, *virginicum*, p. 33, *atricaps*, p. 34, *strenuum*, p. 36, with varr. *illiniense* and *spissiceps*, p. 37, *coloradense*, p. 38, *peninsulare*, *suturale*, p. 39, N. America, n. spp., CASEY, Tr. Ac. St. Louis xv.
- Gauropterus bucharicus*, Buchar, BERNHAUER, p. 585, Verh. Ges. Wien 1905, n. sp.
- Geotiba peyerinhoffi*, Algeria, FAUVEL, p. 193, Rev. Ent. franc. 1905, n. spp.
- Gnypeta lucens*, California, BERNHAUER, p. 254, Deutsche ent. Zeitschr. 1905, n. sp.
- Hemimedon* n. g. *rufipes*, p. 160, *angustum*, p. 161, n. spp., N. America, CASEY, Tr. Ac. St. Louis xv.
- Hesperobium pacificum* with var. *vancouveri*, p. 44, *clavicorne*, p. 47, *atromitens*, *parviceps*, p. 48, *rubripennis*, p. 49, N. America, CASEY, n. spp.
- Heterolinus distinctus*, Chanchamayo, BERNHAUER, p. 17, Deutsche ent. Zeitschr. 1905, n. sp.
- Holotrochus*, descriptions, FAUVEL, pp. 135-137, Rev. Ent. franc. 1905.
- H. brevipennis*, Brazil, BERNHAUER, p. 15, Deutsche ent. Zeitschr. 1905, n. sp.
- Homalium taulogeri*, Tunis, FAUVEL, p. 192, Rev. Ent. franc. 1905, n. sp.
- Homalota nigrescens*, Sumatra, FAUVEL, p. 147, t. c. n. sp.
- Homocerus acuminata*, habits, WASMANN, pp. 418-420, Zeitschr. Insbiol. i.
- Lamprinus* (*Lamprinodes*), habits, WASMANN, pp. 420-424, t. c.
- Lathrimum*, revision of palaearctic, cf. *Prionothorax*, LUZE, pp. 53-68, Verh. Ges. Wien 1905.
- L. hamatum*, Armenia, p. 59, *metallicum*, Akbès, p. 63, *ganglbaueri*, Hungary, p. 65, *gruvilicorne*, Algeria, p. 66, LUZE, t. c. n. spp.
- Lathrobiella* n. g. p. 133, for part of *Lathrobium*, *nigricans*, p. 134, *barda*, p. 135, *gruvilicornis*, *oregonensis*, *fulli* c. p. 136, *vigans*, *habilis*, p. 137, *merrens*, *emula*, p. 138, *modesta*, *fragilis*, p. 139, *rubida*, *famelica*, p. 140, *integra*, *angustula*, p. 141, n. spp., N. America, CASEY, Tr. Ac. St. Louis xv.
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- Lathrobiopsis* n. g. p. 97, *texana* n. sp., N. America, p. 98, CASEY, t. c.
- Lathrobium catenulatum*, Madagascar, FAUVEL, p. 167, Rev. Ent. franc. 1905 ; *L. amplipenne*, p. 81, *subaequale*, *procerum*, *prolongum*, p. 82, *deceptivum*, *spissicorne*, *nigrolucens*, p. 83, *franciscanum*, *picescens*, *longiventre*, p. 85, *vancouveri*, *illini*, *obtusum*, p. 86, *sparsellum*, *washingtoni*, p. 87, *rigidum*, *postremum*, p. 88, *neglectum*, *innocens*, p. 89, *gravidulum*, p. 90, N. America, CASEY, Tr. Ac. St. Louis xv : n. spp.
- Lathrolepta* n. g. near *Lathrobium*, p. 103, for *debilis* Lec., CASEY, p. 104, t. c.
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- Lathrotropis* n. g. for part of *Lathrobium*, p. 115, *relicta*, p. 116, *gnoma*, *validiceps*, p. 117, *vafra*, *ustulata*, p. 118, n. spp., N. America, CASEY, t. c.
- Leptacinus politus*, p. 168, *dieganus*, *microphthalmus*, p. 169, Madagascar, FAUVEL, Rev. Ent. franc. 1905 ; *L. cribricollis*, Java, FAUVEL, p. 83, Mt. Mus. Hamburg xxii : n. spp.
- Leptobium* n. g. type *Doliceon biguttulum* Lac., CASEY, p. 57, Tr. Ac. St. Louis xv.
- Leptochirus piestoides* = (*foersteri* Bernh.), p. 78, var. n. *cribrellus*, p. 77, FAUVEL, Mt. Mus. Hamburg xxii.
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- Leptusa tokar*, Velika, p. 586, *lombarda*, Monte Grigna, p. 587, BERNHAUER, Verh. Ges. Wien 1906 ; *L. atrocephala*, p. 250, *americana*, p. 251, California, BERNHAUER, Deutsche ent. Zeitschr. 1905 : n. spp.
- Leucopederus* n. g. type *P. ustus* Lec., CASEY, p. 67, Tr. Ac. St. Louis xv.
- Leucorus* n. g. near *Scoporus*, p. 192, *ferrugineus*, *luridus*, *ochrinus*, p. 193, *rubens*, p. 194, n. spp., N. America, CASEY, t. c.
- Linolathra* n. g. near *Dacnochilus*, p. 131, *gaudens*, p. 132, *filitarsis*, p. 133, n. spp., N. America, CASEY, t. c.
- Lispinus rufulus*, Gaboon, FAUVEL, p. 194, Rev. Ent. franc. 1905 ; *L. breviceps*, Mexico, BERNHAUER, p. 9, Deutsche ent. Zeitschr. 1905 : n. spp.
- Lissobiops* n. g. for *Cryptobium serpentinum* Lec., CASEY, p. 50, Tr. Ac. St. Louis xv.
- Lithocharis simplex*, p. 149, *sonorica*, p. 150, N. America, CASEY, t. c. n. spp.
- Litolathra* n. g. for part of *Lathrobium*, p. 93, *rhodeana*, *semirubida*, *cruralis*, p. 94, *convictor*, *amputans*, p. 95, *inornata*, *subgracilis*, p. 96, *suspecta*, p. 97, N. America, n. spp., CASEY, t. c.
- Lobathrium lucome*, p. 120, *montanicum*, *coloradenæ*, p. 121, *bipartitum*, p. 122, N. America, CASEY, t. c. n. spp.
- Medon meuseli*, Transcaspien, BERNHAUER, p. 584, Verh. Ges. Wien 1905 ; *M. prognathus*, *megalops*, p. 159, *duplicatus*, *dieganus*, p. 160, *madericassa*, *sexualis*, p. 161, *heterogenus*, *maculipennis*, p. 162, *nova*, *delphinus*, p. 163, Madagascar, FAUVEL, Rev. Ent. franc. 1905 ; *M. prævius*, p. 138, *latecinctus*, *nanus*, p. 139, Java, FAUVEL, t. c. ; *M. helenæ*, p. 162, *lacustre*, *insulare*, p. 163, *americanum*, *inquilinum*, p. 164, *nitidulum*, *opaculum*, *texanum*, p. 165, N. America, CASEY, Tr. Ac. St. Louis xv : n. spp.
- Medonella* n. g. *minuta* n. sp., Florida, CASEY, p. 180, t. c.
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- Neomedon arizonense*, N. America, CASEY, p. 156, t. c. n. sp.
Neophonon n. g. and n. trib. near *Omalini*, *bruchi* n. sp., Argentina, FAUVEL, p. 99, Rev. Ent. franc. 1905.
- Ocalea glabricollis*, Greece, BERNHAUER, p. 590, Verh. Ges. Wien 1905, n. sp.
- Ocyopus olens* and *tenebricosus*, FRIEDRICHS, Zeitschr. Insbiol. i, p. 461.
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- Oligopterus remotus*, p. 181, *filum*, *Aexilis*, p. 182, N. America, CASEY, Tr. Ac. St. Louis xv, n. spp.
- Olophrum*, revision of palaearctic, LUZE, pp. 33–47, Verh. Ges. Wien 1905.
O. transversicolle, Tyrol, id. p. 41, t. c. n. sp.
- Omostilicus* n. g. p. 229, *sonorinus* n. sp., Arizona, p. 230, CASEY, Tr. Ac. St. Louis xv.
- Oosorius regularis*, p. 194, *incisifrons*, p. 195, W. Africa, FAUVEL, Rev. Ent. franc. 1905; *O. frontalis*, Sumatra, FAUVEL, p. 134, t. c. : n. spp.
- Ozymedon* n. g. *rubrum* n. sp., California, CASEY, p. 177, Tr. Ac. St. Louis xv.
- Oxyopoda (Bacoglana) dalmatina*, Radostak, BERNHAUER, p. 594, Verh. Ges. Wien 1905; *O. gatensis*, California, BERNHAUER, p. 256, Deutsche ent. Zeitschr. 1905 : n. spp.
- Oxyopodinus alienus*, Madagascar, BERNHAUER, p. 20, t. c. n. sp.
- Oxytelus syriacus* = (*excellens* Luze), BERNHAUER, p. 595, Verh. Ges. Wien 1905.
- O. extensicornis*, p. 79, *bigemmutus*, *longicornis*, p. 80, Java, FAUVEL, Mt. Mus. Hamburg xxii; *O. punctipennis*, India, *barbatus*, Java, p. 113, *cribrum*, p. 114, *sikkimi*, India, *uncifer*, p. 115, *tenuicornis*, *occipitalis*, p. 116, *raffrayi*, p. 117, Java, *crenulifer*, p. 117, *foraminosus*, p. 118, *pubiventris*, *sericeiventris*, p. 119, *alutellus*, *fuscicornis*, p. 120, *parcuspunctatus*, *galla*, p. 121, *hamacenus*, p. 122, *fulgidus*, *megalomerus*, p. 123, *curticollis*, *reductus*, p. 124, *bidentulus*, *viator*, p. 125, Africa, *jelskii*, p. 126, *apicicornis*, *inequalis*, *hamuliger*, p. 127, *laxissimus*, p. 128, *stricticollis*, *vulcanus*, p. 129, *monodon*, p. 130, *obscurellus*, S. America, *championi*, Guatemala, *rhopalocerus*, *magdalena*, p. 132, *speculiceps*, p. 133, S. America, FAUVEL, t. c.; *O. paradoxus*, Bolivia, BERNHAUER, p. 177, Deutsche ent. Zeitschr. 1905; *O. spinosus*, p. 13, *sharpi*, p. 14, Brazil, BERNHAUER, t. c. : n. spp.
- Pachycorinus puncticollis*, p. 169, *scalabrei*, p. 170, Madagascar, FAUVEL, Rev. Ent. franc. 1905; *P. marginellus*, Gaboon, FAUVEL, p. 195, t. c. : n. spp.
- Pachystilicus* n. g. for *quadriiceps* Lec. and *huhnhami* Wickh., CASEY, p. 226, Tr. Ac. St. Louis xv.
- Pæderillus* n. g. for part of *Pæderus*, p. 62, *carolinae*, *saginitus*, p. 63, *texanus*, p. 65, *ionensis*, *pugetensis*, p. 66, *canonicus*, p. 67, n. spp., N. America, CASEY, t. c.
- Pæderus metallicus*, p. 151, *dilutipes*, *forficularius*, p. 152, Madagascar, FAUVEL, Rev. Ent. franc. 1905; *P. kraepelini*, Java, FAUVEL, p. 82, Mt. Mus. Hamburg xxii; *P. gigas*, Chancamayo, BERNHAUER, p. 17, Deutsche ent. Zeitschr. 1905; *P. ovaliceps*, *bolivianus*, p. 180, *subnitidus*, *magniceps*, p. 181, *curticollis*, p. 182, Peru and Bolivia, BERNHAUER, Deutsche ent. Zeitschr. 1905 : n. spp.
- Palaminus sharpi*, Peru, *erichsoni*, p. 178, *opaculus*, p. 179, Bolivia, BERNHAUER, Deutsche ent. Zeitschr. 1905, n. spp.
- Paragonus acuticollis*, *heterocerus*, Sumatra, FAUVEL, p. 134, Rev. Ent. franc. 1905, n. spp.
- Paralathrus* n. g. *Lathrobiina*, p. 130, *flicornis* n. sp., Colorado, p. 131, CASEY, Tr. Ac. St. Louis xv.

- Paralesteva* n. n. for *Pseudolesteva*, CASEY, p. 164, Canad. Ent. 1905.
- Paramedon* n. g. p. 166, *vancouveri*, *shastanicum*, p. 167, *kumboldti*, p. 168, *kernianum*, *subsimile*, p. 169, *difforme*, p. 170, *apacheanum*, p. 171, *gulare*, *distans*, *pallescens*, p. 172, *conforme*, p. 173, *debile*, *tahoense*, p. 174, *montanum*, *boreale*, *amazonicum*, p. 175, *pinalicum*, p. 176, n. spp., N. America, CASEY, Tr. Ac. St. Louis xv.
- Parastenus* n. n. for *Mesostenus* Rey nec Grav., VON HEYDEN, p. 262, Wien. ent. Zeit. xxiv.
- Parosus skalitskyi*, Antilles, BERNHAUER, p. 12, Deutsche ent. Zeitschr. 1905, n. sp.
- Pentanota* n. g. *Aleocharini*, p. 591, *meuseli* n. sp., Lake Baikal, p. 593, BERNHAUER, Verh. Ges. Wien 1905.
- Philonthus cinctus*, Abyssinia, FAUVEL, p. 140, Rev. Ent. franc. 1905; *P. dimidiaticornis*, *pallidipennis*, Africa, FAUVEL, t. c.; *P. pollux*, p. 178, *limbipennis*, *ingratus*, *ovicollis*, p. 179, *hova*, p. 180, Madagascar, FAUVEL, t. c. : n. spp.
- Phlaeonomus chlorizans*, p. 10, *sumatrensis*, p. 11, Sumatra, BERNHAUER, Deutsche ent. Zeitschr. 1905, n. spp.
- Phlaopora obscura*, Tien-schan, BERNHAUER, p. 590, Verh. Ges. Wien 1905, n. sp.
- Phyllodrepa (Dialycera) sekerae*, Italy, REITTER, p. 242, Wien. ent. Zeit. xxiv, n. sp.
- Phytosus oboctianus*, Perim, FAUVEL, p. 146, Rev. Ent. franc. 1905, n. sp.
- Pinophilus aegyptius* var. n. *punctatulus*, FAUVEL, p. 150, t. c.
- P. schuberti*, p. 149, *mesocerus*, *speculifrons*, p. 150, *fairmairei*, p. 151, Madagascar, FAUVEL, t. c. n. spp.
- Platydromus* n. g. near *Xantholinus*, *erosus* n. sp., Madagascar, p. 174, FAUVEL, t. c.
- Platymedon nevadicum*, N. America, CASEY, p. 179, Tr. Ac. St. Louis xv, n. sp.
- Platystethus spinosus* = (*flavipennis* Luzé), BERNHAUER, p. 595, Verh. Ges. Wien 1905.
- Plociopterus miriventris*, Chancamayo, BERNHAUER, p. 18, Deutsche ent. Zeitschr. 1905, n. sp.
- Polymedon* n. g. for litt. *tabacinum* Cas., CASEY, p. 156, Tr. Ac. St. Louis xv.
- Prionothorax* subg. n. of *Lathrimæum* for *L. reflexum* Reitter, LUZE, pp. 56, 68, Verh. Ges. Wien 1905.
- Proteinus*, table of European, REITTER, pp. 226-228, Wien. ent. Zeit. xxiv.
- P. reflexicollis*, Araxes Valley, p. 226, *altaicus*, Altai, p. 227, REITTER, t. c.; *P. planicollis*, Araxes Valley, REITTER, p. 201, t. c. : n. spp.
- Pseudolathra* n. g. *Lathrobiina*, p. 129, *leviceps* n. sp., N. America, p. 130, CASEY, Tr. Ac. St. Louis xv.
- Pseudomedon ruficollis*, *thoracicum*, *clarescens*, p. 188, *alabamæ*, p. 189, N. America, CASEY, t. c. n. spp.
- Pycnocypta* n. g. type *Cryptobium maxillosum* Gaér., CASEY, p. 28, t. c.
- Pycnorus* n. g. near *Scopæus*, p. 194, *iowanus* n. sp., N. America, p. 195, CASEY, t. c.
- Quedius obliteratus* var. *major* = (*imitatus* Luzé), BERNHAUER, p. 596, Verh. Ges. Wien 1905.
- Q. hummieri*, Greece, BERNHAUER, p. 585, t. c. n. sp.
- Sciocharella* n. g. p. 158, *delicatula* n. sp., Arizona, p. 159, CASEY, Tr. Ac. St. Louis xv.
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- Scopæoderu sonoricu*, California, CASEY, p. 218, t. c. n. sp.
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- Silusa leptocera*, Java, FAUVEL, p. 145, Rev. Ent. franc. 1905, n. sp.
- Stamnoderus carolina*, *pallidus* n. spp., N. America, CASEY, p. 233, Tr. Ac. St. Louis xv.
- Staphylinus notativentris*, Abyssinia, FAUVEL, p. 140, Rev. Ent. franc. 1905; *S. hemichrysis*, *alluaudi*, Africa, FAUVEL, p. 196, t. c.; *S. tana-lensis*, p. 175, *violaceovirens*, p. 176, Madagascar, FAUVEL, t. c.: n. spp.
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- S. monachus*, p. 582, Greece, *ganglbaueri*, Dalmatia, *indubius*, Centr. Asia, p. 583, BERNHAUER, t. c.; *S. aseganus*, Abyssinia, FAUVEL, p. 137, Rev. Ent. franc. 1905: n. spp.
- Stichoglossa graeca*, Greece, BERNHAUER, p. 593, Verh. Ges. Wien 1905, n. sp.
- Stilicolina* n. g. for *tristis* Melsh., CASEY, p. 228, Tr. Ac. St. Louis xv.
- Stilicopsis breviceps*, Java, FAUVEL, p. 138, Rev. Ent. franc. 1905, n. sp.
- Stenusa (Silusa) californica*, Pasadena, BERNHAUER, p. 249, Deutsche ent. Zeitschr. 1905, n. sp.
- Stilosoma* n. g. for *Stilicus rufipes* Germ., CASEY, pp. 219, 220, Tr. Ac. St. Louis xv.
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- Styngetus langei*, Chaucamayo, BERNHAUER, p. 18, Deutsche ent. Zeitschr. 1905, n. sp.
- Suniocharis guttula*, p. 155, *dilutipes*, p. 156, Madagascar, FAUVEL, Rev. Ent. franc. 1905, n. spp.
- Sunius strigilis*, *americanus*, p. 237, *spectrum*, p. 238, *simulans*, *inconstans*, p. 239, *ornatellus*, *fusciceps*, p. 240, *zuni*, *arizonianus*, p. 241, *tenuiventris*, *sectator*, p. 242, *robustus*, p. 243, CASEY, Tr. Ac. St. Louis xv, n. spp.
- Tachinus nitidissimus* n. n. for *splendens* Bernh., BERNHAUER, p. 596, Verh. Ges. Wien 1905.
- Tanygnathus crassicornis*, Madagascar, FAUVEL, p. 182, Rev. Ent. franc. 1905, n. sp.
- Teras* n. g. near *Mesotrochus*, p. 15, *mirabile* n. sp., Engano, p. 16, BERNHAUER, Deutsche ent. Zeitschr. 1905.
- Termitusa* n. g. aberrant, p. 199, *ajocedti* n. sp., p. 200, Cameroons, with Termites, WANMANN, Rev. Ent. franc. 1905.
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- Tetrallus* n. g. near *Ocyusa*, p. 252, *T. fenyesi*, p. 253, *dense punctatus*, p. 254, n. spp., California, BERNHAUER, Deutsche ent. Zeitschr. 1905.
- Tetramedon* n. g. *rufipenne* n. sp., New York, CASEY, p. 178, Tr. Ac. St. Louis xv.
- Thinobius apfelbecki*, p. 580, *brevicornis*, p. 581, Sarajevo, BERNHAUER, Verh. Ges. Wien 1905; *T. nitidulus*, Antilles, BERNHAUER, p. 11, Deutsche ent. Zeitschr. 1905: n. spp.
- Thinocharis inermis*, p. 164, *impressa*, *curticollis*, p. 165, *alluaudi*, *brevigenis*,

- aptera*, p. 166, *diagona*, p. 167, Madagascar, FAUVEL, Rev. Ent. franc. 1906, n. spp.
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PSELAPHIDÆ.

- [Cf. ABEILLE (2), FIORI (566), HOLDHAUS (754), PETERIMHOFF (1161), PIC (1191), REITTER (1257), SCHAEFFER (1323).]
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PAUSSIDÆ.

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 Corrections to Wasmann's paper of last year, WASMANN, p. 110, Notes Leyden Mus. xxv.
Ceratoderus andreuei, Nilgiri hills, DESNEUX, p. 194, Ann. Soc. ent. Belgique 1905, n. sp.
Euplatyrhopalus n. g. for part of *Platyrhopalus*, DESNEUX, p. 18, Gen. ins. fasc. xxxv.
Platyrhopalopsis n. g. for *P. mellyi* and *picteti*, DESNEUX, p. 20, t. c.

PLATYPSYLLIDÆ.

- Platypsyllus castoris*, food, etc., BUSIGNY, p. 108, Bull. Soc. ent. France 1905; *P. castoris*, habits, food, MINGAUD, pp. 161, 162, Feuille Natural. xxxv.

SCYDMENIDÆ.

- [Cf. HOLDHAUS & WAGNER (754), REITTER (1247, 1254), SCHAEFFER (1323).]
Cephennium (Cephennarium) insulare, tarsale, p. 33, *nobile*, p. 35, HOLDHAUS, Riv. Col. ital. iii, n. spp.

- Euconnus (Tetranelus) leonhardi*, Cephalonia, REITTER, p. 242, Wien. ent. Zeit. xxiv, n. sp.
Lophiderus atlanticus, N. Carolina, SCHAEFFER, p. 123, Bull. Brooklyn Inst. i, n. sp.
Scydmanichnus subg. n. of *Stenichus*, *fossifrons*, *coconii* n. spp., Cyprus, REITTER, p. 99, Wien. ent. Zeit. xxiv.

SILPHIDÆ.

- [Cf. ABEILLE (4), CHOBOUT (311), DEVILLE (409), FLEISCHER (575), MÜLLER (1078), PEYERIMHOFF (1161, 1162), REITTER (1246), SCHOOTEDEN (1345).]

- Ablattaria subtriangula*, Spain, REITTER, p. 90, Wien. ent. Zeit. xxiv, n. sp.
Bathyscia mascarauxi, jeanneli, distinct, DEVILLE, p. 231, Bull. Soc. ent. France 1905; *B. pueli*, *B. nemausica*, synonymy and variation, CHOBOUT, p. 250, Bull. Soc. ent. France 1905; *B. aubei*, distribution, CHOBOUT, p. 293, variation, distribution, pp. 297-303, subsp. n. *nicæensis*, p. 300, PEYERIMHOFF, Bull. Soc. ent. France 1905; *B. chardoni* = (*pueli* Chob.) *linderoi* = (*nemausica* Chob.), ABEILLE, p. 208, Bull. Soc. ent. France 1905.
B. mascarauxi, Basses Pyrénées, DEVILLE, p. 160, Bull. Soc. ent. France 1905; *B. bucheti*, Nice, ABEILLE, p. 208, Bull. Soc. ent. France 1905: n. spp.
Catops rescissicollis, Algeria, PEYERIMHOFF, p. 230, Bull. Soc. ent. France 1905, n. sp.
Choleva blackburni n. n. for *antipodum* Bl., PORTEVIN, p. 49, Bull. Soc. ent. France 1905.
Dissochatus Portevin and its two species were previously (1885) described by Reitter; REITTER, p. 199, Wien. ent. Zeit. xxiv.
Eusilpha: the synonymy, PORTEVIN, p. 51, Bull. Soc. ent. France 1905.
Hyponecrotodes; characters of species, synonymy, PORTEVIN, pp. 49, 50, t. c.; *H.*, tabulation, with *Katanecrotodes* subg. n. for *biguttatus apicalis* and *anticala*, SCHOOTEDEN, pp. 195-199, Ann. Soc. ent. Belgique 1905.
Katanecrotodes subg. n. cf. *Hyponecrotodes*.
Leptoderus hohenwarti reticulatus subsp. n., MÜLLER, p. 32, Wien. ent. Zeit. xxiv.
Liodes rotundata Er. is var. of *pallens*, *L. algerica* = (*heydeni* and *bipunctata* Rag.) p. 314, *distinguenda* Fairm. has *montana* Halbh. as ab., p. 315, FLEISCHER, Wien. ent. Zeit. xxiv.
Liodes cinnamomea, humeralis, grandis, anglica, oblonga, simplex, all one species, FLEISCHER, pp. 269-272, t. c.
Necrophorus basalis Fald., PORTEVIN, p. 51, Bull. Soc. ent. France 1905.
Oryotus schmidtii subdentatus subsp. n., MÜLLER, p. 32, Wien. ent. Zeit. xxiv.
Pteromerula subg. n. of *Liodes* for *pallens* Sturm., FLEISCHER, p. 314, Wien. ent. Zeit. xxiv.
Silpha fairmairei n. n. for *bituberosa* Fairm., PORTEVIN, p. 50, Bull. Soc. ent. France 1905.
Thanatophilus tuberculatus, rugosus, distinguished, PORTEVIN, p. 50, t. c.

SCAPHIDIIDÆ.

- Scaphisoma agaricinum* var. n. *punctipenne*, PETZ, p. 100, Wien. ent. Zeit. xxiv; *S. agaricinum robustior* var. n., PIC, p. 169, Echange xxi.
S. flavonotatum, Algeria, PIC, p. 129, t. c. n. sp.

HISTERIDÆ.

[Cf. FIORI (563), LEWIS (951-954), VIEHMAYER (1548), WASMANN (1588).]

Catalogue of the family, 2306 species, LEWIS (951).

- Abræus fakir*, India, LEWIS, p. 349, Ann. Nat. Hist. (7) xvi, n. sp.
Chalcurgus brevipennis, pl. x, f. 8, LEWIS, t. c.
Coryphæus violaceus, Borneo, LEWIS, p. 347, t. c. n. sp.
Cylistosoma n. g. type *Platysoma richteri*, LEWIS, p. 302, op. cit. xv.
C. epilissum, Madagascar, LEWIS, p. 344, op. cit. xvi, n. sp.
Eblisia tenuipes, Yunnan, LEWIS, p. 345, t. c. n. sp.
Heterius ferrugineus, habits, VIEHMAYER, Zeitschr. Insbiol. i, p. 242 ; WASMANN, t. c. pp. 330-332.
Hister aino, pl. x, f. 3, *latistrius*, f. 4, LEWIS, Ann. Nat. Hist. (7) xvi.
H. laqueatus, Cameroons, LEWIS, p. 303, op. cit. xv ; *H. dauphini*, Madagascar, LEWIS, p. 346, op. cit. xvi ; *H. impiger*, Yunnan, LEWIS, p. 609, t. c. : n. spp.
Hololepta fœa, pl. x, f. 1, LEWIS, t. c.
H. trulla, Centr. Africa, LEWIS, p. 302, op. cit. xv, n. sp.
Lioderma intersectum, pl. x, f. 2, LEWIS, op. cit. xvi.
L. acutipectum, W. Africa, LEWIS, p. 302, op. cit. xv, n. sp.
Lissosternus n. g. p. 347, *gracilipes*, n. sp., Bahia, p. 348, pl. x, f. 10, LEWIS, op. cit. xvi.
Macrolister striatisternus, Angola, LEWIS, p. 345, t. c. n. sp.
Notodoma saturum, pl. x, f. 9, p. 347, LEWIS, t. c.
Omalodes bullatus, Goyaz, *tuberculatus*, Fr. Guiana, LEWIS, p. 608, t. c. n. spp.
Pachycræus sulcicollis, f. 5, 6, *princeps*, f. 7, pl. x, LEWIS, t. c.
Paratropus chelonitis, Abyssinia, LEWIS, p. 610, t. c. n. sp.
Plæsius hamatus, Tonkin, p. 342, *asperimargo*, Burma, *striatipectus*, New Britain, p. 343, LEWIS, t. c. n. spp.
Platysoma pullum Gerst. to *Pachycræus*, LEWIS, p. 609, t. c.
P. rimæ, N. W. India, LEWIS, p. 343, t. c. ; *P. levidorsum*, New Guinea, p. 605, *rosselense*, Louisiade Arch., *rufopygum*, p. 606, *pygidiale*, Sumatra, *dorsale*, S. India, p. 607, LEWIS, t. c. : n. spp.
Plegaderus rumaniæ, Roumania, LEWIS, p. 610, t. c. n. sp.
Pygocalis strigifrons, Madagascar, LEWIS, p. 605, t. c. n. sp.
Saprinus conjungens = (*Xenonychus rotundatus* Fiori), FIORI, p. 96, Natural. Sicil. xviii.
S. sinaiticus Crotch, 1871, n. sp. but not recorded, SHARP, p. 520, Ann. Nat. Hist. (7) xv ; *S. cæruleatus*, Madagascar, LEWIS, p. 611, Ann. Nat. Hist. (7) xvi, n. sp.
Sternocalis levidorsis major var. n., PIC, p. 129, Echange xxi.
Teretrius distinctus, habits, LEWIS, p. 605, Ann. Nat. Hist. (7) xvi.
Xenonychus rotundatus, Rome, FIORI, p. 4, Natural. Sicil. xviii, n. sp. (but cf. *Saprinus*).

NITIDULIDÆ.

[Cf. FIORI (569), REITTER (1255), SCHAEFFER (1324).]

- Brachypterus rotundicollis*, Texas, SCHAEFFER, p. 146, Bull. Brooklyn Inst. i, n. sp.
Cybocephalus festivus var. n. *Clypeoniteus*, FIORI, p. 136, Riv. Col. ital. iii.
C. marginatus, Bologna, FIORI, p. 134, t. c. n. sp.
Pocadius pilistriatus, habits, FROGGATT, p. 229, Agric. Gaz. N. S. W. xvi.
Rhizophagus brancsiki, Herzegowina, REITTER, p. 312, Wien. ent. Zeit. xxiv, n. sp.

TROGOSITIDÆ.

[Cf. LÉVEILLÉ (947-949).]

- Acrops perraudierei*, Tonkin, LÉVEILLÉ, p. 38, Ann. Soc. ent. France 1905, n. sp.
- Airora bituberculata*, Brazil, LÉVEILLÉ, p. 45, t. c.; *A. vicina*, Brazil, p. 30, ferruginea, Venezuela, p. 31, LÉVEILLÉ, t. c. : n. spp.
- Alindria auberti*, China, LÉVEILLÉ, p. 92, Bull. Soc. ent. France 1905, and p. 31, Ann. Soc. ent. France 1905, n. sp.
- Ancyrona plana*, p. 38, *bouchardi*, *soror*, p. 41, LÉVEILLÉ, t. c.
- A. feai*, *brunneolimbata*, *congolensis*, Africa, LÉVEILLÉ, p. 93, Bull. Soc. ent. France 1905, and pp. 30, 39, Ann. Soc. ent. France 1905; *A. brunnea*, *elongata*, India, LÉVEILLÉ, p. 42, t. c.; *A. javanica*, Java, LÉVEILLÉ, p. 179, Bull. Soc. ent. France 1905 : n. spp.
- Corticotomus sharpi*, Mexico, LÉVEILLÉ, p. 29, Ann. Soc. ent. France 1905, n. sp.
- Gaurambe*, table of species, LÉVEILLÉ, p. 43, t. c.
- Lophocateres gounellei*, Brazil, LÉVEILLÉ, p. 179, Bull. Soc. ent. France 1905, n. sp.
- Nemosoma cornutum* var. *n. reitteri*, *starcki*, PIC, p. 121, Echange xxi.
- Nemozomia pujoli*, LÉVEILLÉ, p. 29, Ann. Soc. ent. France 1905.
- N. fulva*, Brazil, LÉVEILLÉ, p. 44, t. c. n. sp.
- Tenebroides jatahyensis*, *donckieri*, p. 36, LÉVEILLÉ, t. c.
- T. similis*, Brazil, p. 34, *nigrocyaneus*, Paraguay, p. 35, *passeti*, Brazil, p. 37, LÉVEILLÉ, t. c.; *T. nemozomiaformis*, p. 46, *importunus*, p. 47, *scaberrimus*, p. 48, *alutaceus*, p. 49, LÉVEILLÉ, t. c.; *T. boggianii*, Paraguay, LÉVEILLÉ, p. 92, Bull. Soc. ent. France 1905, and p. 34, Ann. Soc. ent. France 1905 : n. spp.
- Temnochila biolleyi* and *boliviensis*, LÉVEILLÉ, p. 33, Ann. Soc. ent. France 1905.
- T. grilloi*, Brazil, LÉVEILLÉ, p. 92, Bull. Soc. ent. France 1905, and p. 33, Ann. Soc. ent. France 1905, n. sp.

COLYDIIDÆ.

- Bothrideres*; larval habits, HOPKINS, p. 26, P. ent. Soc. Washington vii.
- Cautomus monstrosus*, Liberia, GROUVELLE, p. 109, Bull. Soc. ent. France 1905, n. sp.
- Nepharis goudiei*, Australia, LEA, p. 377, pl. xxvii, figg. 3, 9, P. Soc. Victoria xvii, n. sp.

CUCUJIDÆ and CRYPTOPHAGIDÆ.

- Catogenus rufus*, larval habits, FISKE, p. 90, P. ent. Soc. Washington vii.
- Lamprophlaeus (Silvanophlaeus) mirus*, Madagascar, GROUVELLE, p. 142, Bull. Soc. ent. France 1905, n. sp.
- Atomaria proluxa* and *pulchra*, distinguished, GERHARDT, p. 271, Deutsche ent. Zeitschr. 1905.
- Cryptophagus pubescens* var., MjöBERG, p. 200, Ent. Tidskr. xxvi.

LATHRIDIIDÆ.

[Cf. BRÈTHES (190), PIC (1174), WASMANN (1588).]

- Coccidophilus* n. g. near *Fallia*, p. 76, *citricola* n. sp., Argentina, p. 77, destroying *Mytilaspis*, BRÈTHES, An. Soc. Argent. lix.

- Coluocera maderæ*, relations with *Prenolepis*, WASMANN, pp. 384-390, Zeitschr. Insbiol. i.
Dasycerus beloni, numidicus, N. Africa, PIC, p. 103, Rev. Ent. franc. 1905, n. spp.
Enicmus minutus and *anthracinus* the supposed sexes, GERHARDT, p. 224, Deutsche ent. Zeitschr. 1905.
Lathridius nodiflor ♂ characters, REITTER, p. 199, Wien. ent. Zeit. xxiv.

MYCETOPHAGIDÆ and DERMESTIDÆ.

- Mycetophagus tschitscherini* distinguished from *irroratus*, REITTER, p. 199, Wien. ent. Zeit. xxiv.
Satorystia n. g. near *Litargus, meschniggi*, Hungary, n. sp., REITTER, p. 244, t. c.
Dermestes murinus subvar. n. *nigriceps*, REITTER, p. 244, t. c.
Thaumatoglossa americana, antenna of ♂ and ♀, BARBER, p. 10, cuts, P. ent. Soc. Washington vii.

BYRRHIDÆ.

[Cf. PIC (1184), REITTER (1246), SHARP (670).]

- Chelonarium scabrosum, gravidum, prolixum*, p. 689, *ducale*, p. 690, Centr. America, SHARP, Biol. Centr.-Amer. Col. ii, pt. i, n. spp.
Limnicus (sic) *turkestanicus*, Ferghana, PIC, p. 97, Echange xxi, n. sp.
Trichobyrrhulus championi, La Granja, REITTER, p. 90, Wien. ent. Zeit. xxiv, n. sp.

PARNIDÆ and GEORYSSIDÆ.

- Elmis* (*Latelmis*) *longior, surcoufi*, Algeria, PIC, p. 145, Echange xxi, n. spp.
Parnus arizonensis, Arizona, SCHAEFFER, p. 122, Bull. Brooklyn Inst. i, n. sp.
Georyssus purpurascens, Madagascar, FAIRMAIRE, p. 118, Ann. Soc. ent. Belgique 1905, n. sp.

LUCANIDÆ.

[Cf. BOILEAU (126), GRIFFINI (691, 692), MÖLLENKAMP (1057), NONFRIED (1108), PLANET (1208), REED (1233), VAN ROON (1531), WATERHOUSE (1589), ZANG (1662, 1664).]

- Catalogue of the family, 76 genera, 732 spp., VAN ROON, Tijdschr. Ent. xlviii, pp. 83-180.
The variation of the male mandibles, general discussion, GRIFFINI (691, 692).
Ægus jansonii, Queensland, BOILEAU, p. 17, Naturaliste 1905, n. sp.
Ceratognathus flabellatus, Queensland, p. 177, *macrognathus*, Australia, p. 200, BOILEAU, t. c. n. spp.
Chiasognathus, 2 spp., *granti* and *jousselinii*, synonymy, REED, Revist. chilena viii, pp. 181-188.
Cyclommatus lunifer, Sumatra, p. 71, ♀, p. 286, *imperator*, New Guinea, p. 285, BOILEAU, Naturaliste 1905, n. spp.
Dorcus savrai, Persian Kurdistan, NONFRIED, p. 12, Berlin. ent. Zeitschr. i, n. sp.
Eurytrachelus titan var. n. *typhon*, BOILEAU, p. 17, cut, Naturaliste 1906.
E. minax, Sumatra, MÖLLENKAMP, p. 168, Ina. Börse 1906, n. sp.

- Figulus cicatricorus*, Nilgherry hills, BOILEAU, p. 38, *Naturaliste* 1905 ;
F. horni, Ceylon, ZANG, p. 161, *Deutsche ent. Zeitschr.* 1905 : *n. spp.*
Lissoles cornutus, Australia, BOILEAU, p. 201, *Naturaliste* 1905, *n. sp.*
Metopodontus biplagiatus var. *n. nigripes*, BOILEAU, p. 17, t. c.
M. elisabetha, Usagara, WATERHOUSE, p. 375, *Ann. Nat. Hist.* (7) xv,
n. sp.
Neolucanus brevis (= *birmaensis* Möll.), ZANG, p. 212, *Deutsche ent. Zeitschr.*
1905.
Nigidius; *Hadronigidius* as doubtful subgenus, *N. validus* Pér., ZANG,
p. 215, *Deutsche ent. Zeitschr.* 1905.
N. helleri, Sumatra, p. 47, *impressicollis*, Khasia Hills, p. 60, *levisi*, Liou-
Kiou Ids., p. 61, BOILEAU, *Naturaliste* 1905 ; *N. bonneuilli*, *bawri*,
Philippines, BOILEAU, p. 18, t. c. : *n. spp.*
Odontolabis imperialis ♀, BOILEAU, p. 147, t. c.
O. lowei var. *n. nubigena*, MÖLLENKAMP, p. 168, *Ins. Börse* 1905 ; *O. mouhoti*
= (*elegans* Möll.), characters, ♀, p. 212, *O. lowei* and *eratus*, male
variation, p. 214, ZANG, *Deutsche ent. Zeitschr.* 1905.
O. eremicola, Borneo, MÖLLENKAMP, p. 7, *Ins. Börse* 1905 ; *O. parryi*,
Formosa, BOILEAU, p. 48, *Naturaliste* 1905 : *n. spp.*
Platycerus, in amber, cf. Palæont. p. 128.
Prismognathus branczicki, S. W. China, NONFRIED, p. 11, *Berlin. ent.*
Zeitschr. 1, *n. sp.*
Prosopocelus javanensis, ♂ ♀, ZANG, p. 214, *Deutsche ent. Zeitschr.* 1905.
P. curvidens, Madagascar, NONFRIED, p. 11, *Berlin. ent. Zeitschr.* 1 ; *P.*
aulicus, Borneo, MÖLLENKAMP, p. 7, *Ins. Börse* 1905 ; *P. femoratus*,
Kina-Balu, p. 147, *laminifer*, Sumatra, p. 286, BOILEAU, *Naturaliste*
1905 : *n. spp.*
Pseudolucanus lesnei, Yunnan ?, PLANET, p. 212, *Naturaliste* 1905, *n. sp.*
Sphenognathus nobilis ♀, ZANG, p. 211, *Deutsche ent. Zeitschr.* 1905.
Syndesmus macleayi, Victoria, *punctatus*, New Caledonia (or new Hebrides),
BOILEAU, p. 61, *Naturaliste* 1905, *n. spp.*

PASSALIDÆ.

[Cf. PANGELLA (1135, 1136), ZANG (1654-1656, 1659-1663, 1665-1667).]

ZANG proposes the following **new names**, *Gnomon* for *Eumelus* Kaup,
Lasioperix for *Flavius* Kuw., *Rhipauspis* for *Heterochilus* Kuw.,
Chilomazus for *Laches* Kaup, *Phaulothorax* for *Microthorax* Kuw.,
Scalmus for *Ninus* Kaup, *Protomocelus* for *Pelops* Kaup, *Psilomus* for
Phanocles Kuw., *Macrolobus* for *Phoroneus* Kaup, *Trapezochilus* for
Phruortes Kuw., *Embryulcus* for *Plesthenus* Kaup, *Arrox* for *Sertorius*
Kaup, *Heliscus* for *Sorinus* Kaup, *Alocercus* for *Thryptocerus* Kuw.,
Epipleurothrix for *Trichopleurus* Kuw., *Zosterothrix* for *Vatinus* Kaup ;
Zool. Anz. xxix.

ZANG commences a revision of the work of Kuwert and Kaup, *Notes*
Leyden Mus. xxv, pp. 221-232.

Some noteworthy localities, ZANG, p. 112, *Deutsche ent. Zeitschr.* 1905.

Aceraius oculidens, p. 190, *laniger*, p. 191, Borneo, ZANG, *Deutsche ent.*
Zeitschr. 1905 ; *A. levimargo*, Borneo, ZANG, p. 244, t. c. ; *A. pala-*
vanus, Palawan, ZANG, p. 236, *Notes Leyden Mus.* xxv : *n. spp.*
Analaches ; monograph, ZANG, pp. 24-32, *Deutsche ent. Zeitschr.* 1904.
A. brachymetopus, Amboyna, ZANG, p. 30, t. c. ; *A. paraplesius*, p. 238,
laticauda, p. 240, *bicatus*, p. 241, New Guinea, ZANG, t. c. : *n. spp.*
Auritulus n. g. for *Aulacocyclus patulis* Lew., ZANG, p. 229, *Notes Leyden*
Mus. xxv.

Basilianus certus and *neelgherriensis*, ZANG, p. 223, t. c.

B. binominis, Lower India, ZANG, p. 243, Deutsche ent. Zeitschr. 1905, n. sp.

Comacupes; synonymy, ZANG, p. 231, Notes Leyden Mus. xxv.

C. cormocerus, Padang, ZANG, p. 233, t. c. n. sp.

Didimus duplicatus and *parastictus* distinguished, ZANG, p. 109, Deutsche ent. Zeitschr. 1905.

D. latipunctus, E. Africa, ZANG, p. 315, t. c. n. sp.

Epiaphenoides quæstionis Kuw. = (*Mastochilus capitalis* Blackb.), ZANG, p. 223, Notes Leyden Mus. xxv.

Gonatas differens, characters, ZANG, p. 110, Deutsche ent. Zeitschr. 1905.

G. cetioides, hab.?, ZANG, p. 316, t. c. n. sp.

Heterochilus, characters and position, ZANG, p. 167, t. c.

Kaupiolus trigonophorus, New Guinea, ZANG, p. 316, t. c. n. sp.

Labienus plox and allies, ZANG, p. 111, t. c.

Laches; Kuwert's 5 spp. = varr. of *comptoni*, ZANG, p. 163, t. c.

Leptaulacides and *L. eschscholtzi*, characters, ZANG, p. 106, t. c.

L. rugulosus, p. 100, *fruhstorferi*, p. 102, Tonkin, ZANG, t. c.; *L. barbicauda*, Borneo, p. 164, *andamanarum*, Andaman Ids., p. 166, ZANG, t. c.; *L. palawanicus*, Palawan, p. 232, *anipunctatus*, Assam, p. 234, *anaulax*, Sumatra, p. 235, ZANG, t. c.; *L. nietheri*, Ceylon, ZANG, p. 246, t. c. : n. spp.

Leptaulax timoriensis Perch. = (*glabricollis* Kuw.), ZANG, p. 223, Notes Leyden Mus. xxv.

L. tonkinensis, Manson Mts., ZANG, p. 102, Deutsche ent. Zeitschr. 1905 ;

L. anna, Sumbava, ZANG, p. 316, t. c. : n. spp.

Nasoprocus n. g. for *Passalus heros* Truqui, ZANG, p. 226, Notes Leyden Mus. xxv.

Neleus camerani, p. 9, *cognettii*, p. 13, Paraguay, PANGELLA, Boll. Mus. Torino xx, No. 508, n. spp.

Ninus honduræ var. n. *rosminæ*, PANGELLA, p. 11, t. c. No. 498.

N. nobilii, Paraguay, PANGELLA, p. 5, t. c. No. 508, n. sp.

Oileus; type is *sagittarius* Sm., ZANG, p. 226, Notes Leyden Mus. xxv.

Ophrygonius quadrifer and *inaqualis*, ZANG, p. 192, Deutsche ent. Zeitschr. 1905.

Passalus; type is to be *Neleus interruptus*, ZANG, p. 224, Notes Leyden Mus. xxv.

Paxilloides and *Paxillosomus* are one, ZANG, p. 222, t. c.

Paxillosomus borellii, Asuncion, PANGELLA, p. 3, Boll. Mus. Torino xx, No. 508 ; *P. alfari*, Costa Rica, PANGELLA, p. 9, t. c. No. 498 : n. spp.

Pelopides; type *schraderi* Kuw., ZANG, p. 227, Notes Leyden Mus. xxv.

Platyverres; valid, characters, ZANG, p. 231, t. c.

Proclejoides granulipennis, Chiapas, ZANG, p. 229, Deutsche ent. Zeitschr. 1905, n. sp.

Procululus n. g. *Petreginæ*, p. 225, *inca*, n. sp., Peru, p. 226, ZANG, t. c.

Proculus beckeri, Mexico, ZANG, p. 315, t. c. n. sp.

Protomoculus sternbergi, New Guinea, ZANG, p. 236, t. c. n. sp.

Publius spinipes, Bolivia, ZANG, p. 231, t. c. n. sp.

Rhodocanthopus biolleyi, Costa Rica, PANGELLA, p. 3, Boll. Mus. Torino xx, No. 498, n. sp.

Spurius dichotomus, Centr. America, ZANG, p. 227, Deutsche ent. Zeitschr. 1905, n. sp.

Tæniocerus bicanthatus, note, ZANG, p. 105, t. c.

Tiberius, characters and composition, ZANG, p. 163, t. c.

Verres camerani, Costa Rica, PANGELLA, p. 7, Boll. Mus. Torino xx, No. 498 ; *V. sternbergianus*, Venezuela, ZANG, p. 315, Deutsche ent. Zeitschr. 1905 : n. spp.

SCARABÆIDÆ.

Coprini.

[Cf. ARROW (30), BLACKBURN (123), FAIRMAIRE (534), FALL (540), KOLBE (878), MOLLANDIN (1056), D'ORBIGNY (1124), PUCCIONI (1220), WICKHAM (1630), ZANG (1657).]

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p. 474, *rufipennis*, p. 476, *semirubens*, p. 478, *atrofasciatus*, p. 480, *capillosus*, p. 482, *miscellus*, p. 483, *tenuistriatus*, p. 485, *atrovirens*, p. 486, *mixticaps*, p. 487, *asperulus*, p. 488, *clusifrons*, p. 489, *chryso-derus*, p. 490, *gibberosus*, p. 492, *gibber*, p. 493, *trifidisetis*, p. 495, *altilamina*, p. 496, *lobaticollis*, p. 498, *stellioidea*, p. 500, *debilis*, p. 502, *subocellatus*, p. 503, *ocellatus*, p. 504, *furculifer*, p. 505, *O. (Phalops) tuberosus*, p. 508, *O. (Proagoderus) nasidens*, p. 510, *fosandornis*, p. 512, *longefossus*, p. 514, *atriclaviger*, p. 516, *ignitus*, p. 518, *randornis*, p. 521, *trianguliceps*, p. 523, Africa, D'ORBIGNY, t. c.; *O. biconifer*, p. 527, *inclusus*, p. 528, *comatulus*, p. 529, *ventrosus*, p. 530, Africa, D'ORBIGNY, t. c. : **n. spp.**

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Stereomera **n. g.** near *Rhyparus*, p. 534, *pusilla* **n. sp.**, Singapore, p. 535, ARROW, t. c.

Sybacodes lutulentus redescribed, ARROW, p. 539, t. c.

Glaphyrini.

Anthypna carceoli var. *n. laportei*, LEONI, pp. 116-119, Riv. Col. ital. iii.

Melolonthini.

[Cf. BLACKBURN (123), FAIRMAIRE (534), MATUSOVITZ (1015), PIC (1183, 1193), REITTER (1249), RITSEMA (1271, 1272).]

Classification of Australian *Melolonthides*, BLACKBURN, pp. 276-281, Tr. R. Soc. S. Austral. xxix.

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Anoxia nigricolor, Adana, PIC, p. 177, Echange xxi, **n. sp.**

Apogonia, supplementary list, RITSEMA, pp. 111-116, Notes Leyden Mus. xxv.

A. waterstradti, p. 103, *speculifera*, p. 105, *lobata*, p. 106, *helleri*, p. 107, Borneo, RITSEMA, t. c. **n. spp.**

Automolus, characters, BLACKBURN, pp. 331, 332, Tr. R. Soc. S. Austral. xxix.

Chilotrogus **n. g.** near *Rhizotrogus*, p. 202, *panotrogoides* **n. sp.**, Persia, p. 203, REITTER, Wien. ent. Zeit. xxiv.

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Rutelini.

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Tonkin, OHAUS, Deutsche ent. Zeitschr. 1905, n. spp.

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millingeni, Arabia, PIC, p. 153, Echange xxi; *A. emarginatus*, Omdur-
man, OHAUS, p. 6, Jägerskiöld exp. No. 10a; *A. ampliatus*, p. 120,
lutosipennis, p. 221, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique
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1905: n. spp.

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n. sp. p. 273, OHAUS, Stettin Ent. Zeit. lxi.

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A. palestina, Jerusalem, PIC, p. 129, t. c.; *A. nubeculosa*, p. 84, *viridi-*
sericea, polychroma, p. 85, *fusconigata, graminea*, p. 86, *A. (Spilota)*
nupta, p. 87, Tonkin, OHAUS, Deutsche ent. Zeitschr. 1905; *A. nigro-*
sellata, Venezuela, p. 283, *schneideri*, Honduras, p. 284, OHAUS, Stettin
Ent. Zeit. lxi: n. spp.

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A. amazona Thunb. to *Lugochile*, OHAUS, p. 286, t. c.

A. helleri, Ecuador, OHAUS, p. 295, t. c. n. sp.

Areoda espiritosantensis, S. America, OHAUS, p. 322, t. c. n. sp.

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n. spp.

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- p. 299, *auriceps*, *jordani*, p. 300, *microcephaloides*, p. 301, *sulcatus*, p. 302, S. America, OHAUS, t. c. n. spp.
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- Odontognathus riedeli*, Brazil, OHAUS, p. 312, Stettin Ent. Zeit. lxvi, n. sp.
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- Pseudochlorota n. g.*, *chiriquina*, Chiriqui, p. 306, *peruana*, Peru, p. 307, n. spp., OHAUS, Stettin Ent. Zeit. lxvi.
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- Spodochlamys flavifemorata*, Venezuela, p. 265, *theringi*, Brazil, p. 266, *popuyana*, p. 268, *curvibrachialis*, p. 270, Colombia, OHAUS, t. c. n. spp.
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- Thyridium violaceipes*, *oblongum*, p. 302, *marginicollis*, *caucanum*, p. 303, S. America, OHAUS, t. c. n. spp.

Dynastini.

[Cf. BRÈTHES (188), FAIRMAIRE (534), FALL (542), KOLBE (879), TITUS (1496).]

Aphonodelus n. g. *Heteronychides*, *coriaceipennis* n. sp., Cameroons, p. 4, KOLBE, Arkiv Zool. ii, No. 18.

Aphonoproctus n. g. *Heteronychides*, p. 2, *pentodontinus* n. sp., Cameroons, p. 3, KOLBE, t. c.

Archophanes n. g. for *Oryctes cratericollis* Fairm., KOLBE, p. 19, t. c.

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Pycnoschema camerunum, W. Africa, p. 6, *simplicicollis*, p. 7, *suillum*, p. 8, Angola, KOLBE, t. c.

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Cetoniini.

[Cf. BRAEM (170), FAIRMAIRE (534, 537), HELLER (737), JANSON (815), LE COMTE (932, 933), MOSER (1076), WATERHOUSE (1589).]

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C. (Potosia) mayeti, Malta (or Benghazi), LE COMTE, p. 274, Bull. Soc. ent. France 1905, n. sp.

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Dicelluchilus n. g. near *Compsoccephalus*, p. 376, *woodi* n. sp., Usagara, p. 377, WATERHOUSE, Ann. Nat. Hist. (7) xv.

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BUPRESTIDÆ.

[Cf. ABEILLE (3), CSIKI (378), FAIRMAIRE (534), FALL (539, 542), FLEUTIAUX (581), KERREMANS (835), OBST (1114), PIC (1184), REITTER (1249), SCHAEFFER (1323, 1324), THÉRY (1488, 1489), WATERHOUSE (1590), WICKHAM (1630).]

Revision of *Buprestidæ* of Madagascar, and discussion of the fauna, THÉRY (1488).

- Acmaödera arenicola*, Hungary, CSIKI, p. 578, Ann. Mus. Hungar. iii ; *A. amunicola*, Syria, PIC, p. 97, Echange xxi ; *A. angustata*, E. Africa, OBST, p. 432, Zool. Jahrb. Syst. xxii ; *A. fairmairei*, Madagascar, THÉRY, pl. i, fig. 1, p. 31, Bupr. Madag. : n. spp.
- Actenodes albifrons*, p. 111, *uniformis*, pl. iii, fig. 16, *frater*, fig. 17, p. 112, Madagascar, THÉRY, t. c. n. spp.
- Agæocera gentilis* (= *fenyesi* Kerr.), WATERHOUSE, p. 577, Ann. Nat. Hist. (7) xv.
- Agrius perrini* n. n. for *divaricatus* Ab., PIC, p. 185, Echange 1905.

- A. divaricatus*, Algeria, p. 207, *bedeli*, La Granja, p. 208, ABEILLE, Bull. Soc. ent. France 1905; *A. auroguttatus*, p. 149, *huachucae*, *quercus*, p. 150, Arizona, SCHAEFFER, Bull. Brooklyn Inst. iii; *A. subtropicus*, Texas, SCHAEFFER, p. 131, op. cit. i; *A. snowi*, Arizona, FALL, p. 271, Canad. Ent. 1905: **n. spp.**
- Anthaxia salicis* var. **n. speciosa**, CSIKI, p. 581, Ann. Mus. Hungar. iii.
- A. nyassica*, Africa, OBST, p. 430, Zool. Jahrb. Syst. xxii; *A. ventricosa*, p. 106, *hydropica*, pl. ii, fig. 12, p. 107, *episcopalis*, fig. 13, *scabra*, fig. 14, *hova*, fig. 15, p. 108, Madagascar, THÉRY, Bupr. Madag.: **n. spp.**
- Aphanisticus bouvieri*, p. 144, *elegans*, *inornatus*, p. 145, *integricollis*, *sicardi*, p. 146, *maleficus*, p. 147, Madagascar, THÉRY, t. c. **n. spp.**
- Chrysobothris edwardsii* ♂, SCHAEFFER, p. 129, Bull. Brooklyn Inst. i.
- C. decorsei*, Madagascar, THÉRY, p. 109, Bupr. Madag.; *C. bimarginicollis*, Arizona, SCHAEFFER, p. 148, Bull. Brooklyn Inst. i; *C. thoracicus*, Lower California, p. 128, *serripes*, Utah, p. 130, SCHAEFFER, t. c.: **n. spp.**
- Chrysodema ventralis* = (*navicularis* Kert.), *C. dohrnii* = (*fairmairei* Kert.) *mnizechi* being distinct, *C. wallacei* = (*sumatrensis* Kert.), WATERHOUSE, p. 583, Ann. Nat. Hist. (7) xv.
- C. yerburyi*, Ceylon, WATERHOUSE, p. 583, t. c. **n. sp.**
- Cinyra purpurascens*, Lower California, SCHAEFFER, p. 127, Bull. Brooklyn Inst. i, **n. sp.**
- Corebus orientalis*, Bucharest, ABEILLE, p. 207, Bull. Soc. ent. France 1905, **n. sp.**
- Cylindromorphus albifrons*, Madagascar, pl. v, fig. 28, THÉRY, p. 141, Bupr. Madag. **n. sp.**
- Dicerca alni*, food-habits, MOLLANDIN, p. 95, Bull. Soc. ent. France 1905.
- Dilopholotus flacourti*, p. 130, *furiosus*, p. 131, *mocquerysi*, *decorsei*, p. 132, *inconstans*, pl. iv, fig. 22, p. 133, *nivifera*, p. 134, *decoloratus*, fig. 23, p. 135, *fallax*, fig. 24, *inornatus*, fig. 25, p. 136, *abeillei*, fig. 26, p. 137, *tristis*, p. 138, *crassus*, fig. 27, *spurcus*, p. 139, Madagascar, THÉRY, Bupr. Madag. **n. spp.**
- Discoderes ampliatus*, Madagascar, FAIRMAIRE, p. 124, Ann. Soc. ent. Belgique 1905, **n. sp.**
- Dystaxia elegans*, San Diego, FALL, p. 71, Ent. News Philad. xvi, **n. sp.**
- Ectinogonia compositi*, Guyaquil, THÉRY, p. 152, Naturaliste 1905, **n. sp.**
- Entomogaster mocquerysi*, *asperulus*, pl. iv, fig. 20, Madagascar, THÉRY, p. 120, Bupr. Madag. **n. spp.**
- Galbella insularis*, pl. vii, fig. 48, p. 167, *chrysonota*, fig. 49, p. 168, *pretiosa*, figg. 50, 51, p. 169, *byrrhoides*, fig. 52, *limbata*, fig. 53, p. 170, *antiqua*, fig. 54, p. 171, Madagascar, THÉRY, t. c. **n. spp.**
- Gyascutus juniperinus*, Utah, WICKHAM, p. 167, Canad. Ent. 1905, **n. sp.**
- Halecin soror*, Ecuador, p. 577, *trilineata*, Mexico, p. 578, *elongata*, *buckleyi*, Ecuador, p. 579, *sexcostata*, Bogota, p. 580, *rugosa*, p. 581, *viridiplendens*, Brazil, p. 582, WATERHOUSE, Ann. Nat. Hist. (7) xv, **n. spp.**
- Hypopruis magnifica*, *harpage*, distinguished, WATERHOUSE, p. 577, t. c.
- Iridotenuis lineata* = (*javana* Kert.), WATERHOUSE, p. 583, t. c.
- Julodis mathiaseni*, Persia, REITTER, p. 204, Wien. ent. Zeit. xxiv; *J. bouvieri*, Persia, p. 227, *damarina*, Namaqualand, p. 286, *karrooana*, S. Africa, p. 302, KERREMAN, Mon. Buprest. i: **n. spp.**
- Mastognus robustus*, Arizona, SCHAEFFER, p. 148, Bull. Brooklyn Inst. i, **n. sp.**
- Melanophila hungarica*, Hungary, CSIKI, p. 579, Ann. Mus. Hungar. iii, **n. sp.**
- Meliborus insipidus*, Madagascar, THÉRY, pl. iv, fig. 21, p. 123, Bupr. Madag. **n. sp.**

- Neoptosima* n. g. p. 35, including *Ptos. sericea* and *fairmairei*, and with *kerremansi*, p. 36, *spinosa*, *deplanata*, p. 37, n. spp., Madagascar, THÉRY, t. a.
- Paracastalia ornatipennis*, p. 412, *minima*, p. 418, E. Africa, KERREMANS, Mon. Buprest. i, n. spp.
- Polycesta elata* a distinct species, FALL, p. 73, Ent. News Philad. xvi.
- Pseudacherusia* n. g. p. 382, *theryi* n. sp., Goyas, p. 384, pl. vii, fig. 1, KERREMANS, Mon. Buprest. i.
- Pseudocoræbus* n. g. near *Chloricalla*, *mocquerysi*, pl. iii, fig. 18, n. sp., Madagascar, THÉRY, p. 121, Bupr. Madag.
- Psiloptera aspasia* Gerst. and *rubrocincta* Kerr. are the same, but *quadriareolata* Fährs. and *bioculata* Ol. are distinct, *P. nigroænea* Kerr. = (*soror* Obst) and *subcatenulata* Thoms. = (*ænea* Obst), Opst, pp. 426, 427, Zool. Jahrb. Syst. xxii.
- P. serenditata*, E. Africa, OBST, p. 423, t. c.; *P. alborivittata*, E. Africa, OBST, p. 429, t. c.; *P. (Lampetis) decorsei*, pl. i, fig. 4, p. 42, *vabreasi*, *lemur*, p. 43, *cyclops*, p. 44, *pater*, p. 45, *P. (Lampetis) æordida*, p. 48, *donckieri*, pl. i, fig. 9, p. 49, *P. (Apatea) abeilli*, p. 54, *P. rubripes*, *fallax*, *longicollis*, p. 57, *alcyon*, pl. i, fig. 6, p. 59, *pandus*, p. 60, *moralesi*, pl. ii, fig. 7, p. 62, *grandidieri*, p. 65, *mocquerysi*, p. 68, *wautersi*, p. 75, *adspersipennis*, p. 76, *rustica*, *republicana*, pl. ii, fig. 9, p. 78, *pulverulenta*, p. 80, *nivifera*, p. 84, *errata*, *angulosa*, p. 99, *heydeni*, pl. ii, fig. 10, p. 100, *diecki*, fig. 11, p. 101, Madagascar, THÉRY, Bupr. Madag.; *P. cupreopunctata*, Texas, SCHAEFFER, p. 147, Bull. Brooklyn Inst. i : n. spp.
- Ptosima* 11-maculata var. n. *multimaculata*, PIC, p. 177, Echange xxi.
- Sphenoptera aliena*, E. Africa, OBST, p. 424, Zool. Jahrb. Syst. xxii, n. sp.
- Stenianthe carbonaria*, Madagascar, THÉRY, pl. i, fig. 2, p. 35, Bupr. Madag. n. sp.
- Sternocera frutetorum*, Nyassa, p. 142, KERREMANS, Mon. Buprest. i, n. sp.
- Sternotomis pupieri*, Comoro Ids., FLEUTIAUX, p. 7, Bull. Soc. ent. France 1905, n. sp.
- Trachys kova*, pl. v, fig. 20, *mocquerysi*, fig. 30, p. 150, *vivida*, fig. 31, p. 151, *decorsei*, fig. 32, *nicardi*, p. 153, *cambouei*, fig. 33, *spectrum*, fig. 34, p. 154, *nioba*, fig. 35, *nyctelia*, fig. 36, p. 155, *immota*, fig. 37, p. 156, *corculum*, fig. 38, *dedita*, fig. 39, p. 157, *dura*, pl. vi, fig. 40, *grandiceps*, fig. 41, p. 158, *kervillei*, fig. 42, *fischeri*, fig. 43, p. 159, *compacta*, fig. 44, *creon*, fig. 45, p. 160, *delice*, pl. vii, fig. 46, p. 161, *corinna*, fig. 47, p. 162, Madagascar, THÉRY, Bupr. Madag. n. spp.

EUCNEMIDÆ and THROSCIDÆ.

- Phyllocerus diversicornis*, Taurus, PIC, p. 181, Echange xxi, n. sp.
- Throsacus bachofeni*, Transcaspian, REITTER, p. 91, Wien. ent. Zeit. xxiv, n. sp.

ELATERIDÆ.

[Cf. DU BUYSSON (226-228), FALL (542), FIORI (569), FLEUTIAUX (580), PIC (1187, 1191), REITTER (1245), SCHWARZ (1169, 1170).]

Elateridæ, table of genera of palaearctic, of the families of *Sternorina* and of the species of *Aithouina*, REITTER, Verh. Ver. Brunn. xliii. Heft lvi of Bestimmungs-Tabelle.

Adelocera auricollis, Madagascar, SCHWARZ, p. 273, Deutsche ent. Zeitschr. 1905; *A. subaurata*, Ceylon, SCHWARZ, p. 257, t. c. : n. spp.

Æolus and *Heteroderes*, relations, FLEUTIAUX, p. 322, Ann. Soc. ent. France 1905.

- Agonischius subaenescens*, Assam, SCHWARZ, p. 263, Deutsche ent. Zeitschr. 1905, n. sp.
- Agriotes rubidicinctus*, Mantchuria, DU BUYSSON, p. 16, Bull. Mus. Paris 1905, n. sp.
- Alaotypus duchoni*, Assam, SCHWARZ, p. 257, Deutsche ent. Zeitschr. 1905, n. sp.
- Alaus rotundimaculatus*, p. 284, *brevipennis*, *nigromaculatus*, p. 285, *tigrinus*, p. 286, W. Africa, SCHWARZ, t. c. n. spp.
- Alcimathous* subg. n. of *Athous* for *A. sacheri* Kies., REITTER, p. 42, Verh. Ver. Brunn xliii.
- Arraphes diptychus* Cand. var. = (*confusus* Fleut.), FLEUTIAUX, p. 327, Ann. Soc. ent. France 1905.
- Athous*; treated, BUYSSON, pp. 337–368, Faune gallo-rhénane; also REITTER, Verh. Ver. Brunn xliii.
- A. olecei*, Tangier, BUYSSON, p. 211, Bull. Soc. ent. France 1905; *A. corvinus*, Syria, p. 38, *pullus*, Caucasus, *plicatulus*, E. Siberia, p. 40, *A. (Grypocarus) densatus*, S.-E. Europe, p. 43, *vittatoides*, Albania, p. 46, *A. (Anathrotus) villigeroides*, Monte Rosa, p. 55, *A. (Haplathous* subg. n. p. 61) *corcyreus*, p. 62, *kerkyranus*, p. 63, Corfu, *milleri*, Istria, p. 65, *angulifrons*, Eur. mont. p. 66, *stellatus*, Carnian Alps, p. 67, *dilaticornis*, Crimea, p. 68, *carpathicus*, Rodna mts. p. 71, *sosybius*, Daghestan, p. 73, *turcicus*, Turkey, p. 75, *A. (Orthathous* subg. n. p. 80) *leonhardi*, Herzegowina, p. 81, *harmodius*, *holtzi*, Greece, p. 85, *apfelbecki*, Servia, p. 86, *krugeri*, N. Spain, p. 88, *singularis*, Dalmatia, p. 89, *caviformis*, p. 90, *meuseli*, Bosnia, *cavulus*, Nikolajew, p. 91, *lomnickii*, Galicia, p. 92, *A. (Grypalthous* subg. n. p. 92) *gerezanus*, Spain, p. 99, *serbicus*, Bosnia, *gobanzi*, Dalmatia, p. 105, *picipennis*, Banat, *carpathophilus*, Transylvania, p. 106, *cervicolor*, Asturias, p. 107, *goriciensis* Görz, p. 110, *plagiipennis*, Hungary, p. 112, REITTER, Verh. Ver. Brunn xliii: n. spp.
- Calambus bipustulatus* var. n. *epipleuralis*, DU BUYSSON, p. 17, Bull. Mus. Paris 1905.
- Cardiophorus latelimbatus*, Marocco, PIC, p. 105, Echange xxi; *C. imperus*, Biskra, p. 209, *sbeitlensis*, Tunis, p. 210, DU BUYSSON, Bull. Soc. ent. France 1905; *C. differens*, Madagascar, p. 289, *obliquemaculatus*, Natal, p. 290, SCHWARZ, Deutsche ent. Zeitschr. 1905; *C. arizonensis*, Arizona, FALL, p. 270, Canad. Ent. 1905: n. spp.
- Cardiatus nitidissimus*, Madagascar, SCHWARZ, p. 290, Deutsche ent. Zeitschr. 1905, n. sp.
- Compsolecon* n. g. for *Archontas crenicollis*, REITTER, p. 6, Verh. Ver. Brunn xliii.
- Corymbites africanus*, Transvaal, SCHWARZ, p. 291, Deutsche ent. Zeitschr. 1905, n. sp.
- Diacanthous* subg. n. of *Harminius* for *Athous undulatus*, REITTER, p. 25, Verh. Ver. Brunn xliii.
- Dicronychus crassipes*, S. Thomé, SCHWARZ, p. 282, Deutsche ent. Zeitschr. 1905, n. sp.
- Dorigonus ceylanicus*, Kandy, FLEUTIAUX, p. 321, Ann. Soc. ent. France 1905, n. sp.
- Drasterius bimaculatus*, *figuratus*, *egyptiacus*, DU BUYSSON, p. 18, Bull. Mus. Paris 1905; *D. bimaculatus wachsmanni* subsp. n., REITTER, p. 91, Wien. ent. Zeit. xxiv.
- Elasmosomus apicalis*, p. 273, *pulchellus*, p. 274, *pulcher*, p. 275, Africa, SCHWARZ, Deutsche ent. Zeitschr. 1905, n. spp.
- Elathouina* n. g. for *A. amicus* Perr., REITTER, p. 19, Verh. Ver. Brunn xliii.
- Elatrigus* n. g. for *Tetrigus cyprius* Baudi, REITTER, p. 10, t. c.
- Euplathous* subg. n. of *Athous* type *A. vanus* Duf., REITTER, p. 76, t. c.

- Grypathous* subg. n. cf. *Athous*.
Haplathous subg. n. cf. *Athous*.
Harminius (*Megathous* subg. n. p. 27) for *Athous menetriesi*, major, Styria, p. 28, *jakobsoni*, Mongolia, n. spp., p. 29, REITTER, Verh. Ver. Brunn xliii.
Hemicleus fasciculatus, p. 276, *longicollis*, p. 277, Africa, SCHWARZ, Deutsche ent. Zeitschr. 1905, n. spp.
Hemiops assamensis, p. 264, *duchoni*, p. 265, Assam, *angularis*, Sumatra, p. 266, SCHWARZ, t. c. n. spp.
Hemirraphes bivittatus, S. India, FLEUTIAUX, p. 326, Ann. Soc. ent. France 1905, n. sp.
Heterathous subg. n. of *Athous* for *A. sanguinicollis* Friv., REITTER, p. 32, Verh. Ver. Brunn xliii.
Homotechnes brunneus, S. India, FLEUTIAUX, p. 325, Ann. Soc. ent. France 1905, n. sp.
Hypnoidus incommodus, p. 325, *monadicoides*, *candezai*, p. 326, India, FLEUTIAUX, t. c. n. spp.
Lacon nebulosus, *bigranosus*, Madagascar, SCHWARZ, p. 278, Deutsche ent. Zeitschr. 1905; *L. niger*, Darjiling, p. 258, *principatus*, Ceylon, p. 259, SCHWARZ, t. c. : n. spp.
Leptoschema = (*Elatous* Reitt.), REITTER, p. 20, Verh. Ver. Brunn xliii.
Limonicus n. g. for part of *Limonius*, *violaceus* etc., REITTER, p. 14, t. c.
Limonius (*Prophelotes* subg. n.) *grandii*, Bologna, FIORI, p. 131, Riv. Col. ital. iii, n. sp.
Lobotarus ambiguus, p. 279, *maculatus*, p. 280, Madagascar, *misser*, Gaboon, p. 281, SCHWARZ, Deutsche ent. Zeitschr. 1905, n. spp.
Ludius cinctus var. n. *semitestacea*, PIC, p. 181, Bull. Soc. ent. France 1905.
L. (Calosirus) incostatus, Syria, p. 169, *L. (Selatosomus) taygetanus*, Morea, p. 170, PIC, t. c.; *L. maindroni*, S. India, FLEUTIAUX, p. 329, Ann. Soc. ent. France 1905 : n. spp.
Megathous subg. n. cf. *Harminius*.
Melanathous n. g. *sequensi* n. sp., Taygetos, REITTER, p. 25, Verh. Ver. Brunn xliii.
Melanoxanthus motschulskyi, N. India, p. 323, *pomachilioides*, Nilgiris, p. 324, FLEUTIAUX, Ann. Soc. ent. France 1905, n. spp.
Negastrinus quadriguttatus, larva and pupa, pl. figg. 3, 4, p. 34, MjöBERG, Arkiv Zool. ii, No. 17.
Nomopleus fleutiauxi, S. Africa, *macer*, E. Africa, p. 20, SCHWARZ, p. 292, Deutsche ent. Zeitschr. 1905, n. spp.
Odontonychus niger, Cameroons, SCHWARZ, p. 281, t. c. n. sp.
Orthathous subg. n. cf. *Athous*.
Paralacon n. g. for *Lacon cinnamomeus* Cand.?, REITTER, p. 6, Verh. Ver. Brunn xliii.
Penia lateralis, p. 261, *marmorata*, *bimaculata*, p. 262, *niger*, p. 263, N. India, SCHWARZ, Deutsche ent. Zeitschr. 1905, n. spp.
Phedomenus pallipes, Madagascar, p. 287, *bipunctatus*, W. Africa, p. 288, SCHWARZ, t. c. n. spp.
Pleurathous subg. n. of *Athous* type *A. godarti*, REITTER, p. 48, Verh. Ver. Brunn xliii.
Procerus n. g. for *Megupenthes tibialis* etc., REITTER, p. 11, t. c.
Prophelotes subg. n. cf. *Limonius*.
Psephus assamensis, Kohima, SCHWARZ, p. 260, Deutsche ent. Zeitschr. 1905, n. sp.
Silesis vuulogeri, Algeria, BUYSSON, p. 110, Bull. Soc. ent. France 1905, n. sp.
Spilus africanus, W. Africa, SCHWARZ, p. 283, Deutsche ent. Zeitschr. 1905, n. sp.
Tetralobus duchoni, Assam, SCHWARZ, p. 260, t. c. n. sp.

Tropihypnus n. g. for *Paracardiophorus bimargo* Reitt., REITTER, p. 9, Verh. Ver. Brunn xliii.

CEBRIONIDÆ.

Cebrio xanthoderes var. n. *vaulogeri*, p. 153, *C. guyoni* var. n. *obscurior*, p. 154, PIC, Echange xxi.
C. subattenuatus, pelissieri, Algeria, PIC, p. 154, t. c. n. spp.

MALACODERMIDÆ.

[(Cf. BARBER (75), BOURGEOIS (150-157), CHAIGNON (296), FAIRMAIRE (534), FIORI (568, 570), GORHAM (676), GOUNELLE (677), KNAB (671), OLIVIER (1121-1123), PIC (1180, 1182, 1186, 1187, 1189-1193).]

Isochromism of *Lycidæ*, and of insects resembling them, GOUNELLE, Bull. Soc. ent France 1905, pp. 132-134.

Absidia obscuricolor, Japan, PIC, p. 121, Echange xxi, n. sp.

Acanthocnemus brevicornis, note, PIC, p. 23, Bull. Soc. ent. France 1905.

Anthocomus coriaceus, S. Africa, GORHAM, p. 275, P. Zool. Soc. London 1905, ii, n. sp.

Astylus argentinus, S. America, PIC, p. 92, Naturaliste 1905, n. sp.

Attalus nourricheli, var. n. *marginatus*, LEONI, pp. 106-109, Riv. Col. ital. iii.

A. fruhstorferi, Darjeeling, PIC, p. 92, Naturaliste 1905; *A. obscuripennis*, Algeria, PIC, p. 154, Echange xxi : n. spp.

Azinotarnus robustus, Tangier, PIC, p. 106, t. c. n. sp.

Calopteron variegatum var. n. *flavofasciatum*, p. 11, *torquatum albofasciatum* var. n. p. 113, *reticulatum inhumale* var. n. p. 115, *melanosanthum geayianum* var. n. p. 117, *limbatum signatum* var. n. p. 119, BOURGEOIS, Ann. Soc. ent. France 1905.

Cantharis bicolor var. n. *discostacea*, *C. lateralis* var. n. *nigronotata*, PIC, p. 186, Echange 1905; *C. parnassicus* var. n. *latemaculata*, PIC, p. 161, t. c.; *C. fusca* varr. n. *marsicana fracassii*, LEONI, p. 130, Riv. Col. ital. iii.

C. guiletti, Japan, PIC, p. 113, Echange xxi, n. sp.

Cladophorus bifrensensis, p. 191, *bolivari*, p. 192, Spanish Guinea, BOURGEOIS, Mem. Soc. Espan. i; *C. sutrapa*, Kurseong, BOURGEOIS, p. 47, Ann. Soc. ent Belgique 1905 : n. spp.

Curtos motschulskyi, Java, OLIVIER, p. 208, Ann. Soc. ent. Belgique 1905, n. sp.

Cyrtopteron n. g. for part of *Calopteron*, BOURGEOIS, p. 122, Ann. Soc. ent. France 1905.

Cyrtosus baborensis, Algeria, PIC, p. 121, Echange xxi, n. sp.

Dalthomes subg. n. cf. *Malthodes*.

Danacaca moreana, Greece, PIC, p. 161, Echange xxi, n. spp.

Dictyoptera taygetana, Greece, PIC, p. 185, t. c.; *D. brusti*, Kurseong, BOURGEOIS, p. 47, Ann. Soc. ent. Belgique 1905 : n. spp.

Dolichomorphus subg. n. cf. *Psilothrix*.

Drilus creticus, Crete, PIC, p. 170, Echange xxi, n. sp.

Eberus carinatipennis, Sikkim, PIC, p. 92, Naturaliste 1905, n. sp.

Hedonistes n. g. near *Hedybius*, p. 278, *latus*, n. sp., Cape Colony, p. 279, GORHAM, P. Zool. Soc. London 1905, ii.

Hedybius sculpticeps, p. 275, *quadricornis*, p. 276, S. Africa, GORHAM, t. c. n. spp.

Idiopteron n. g. for part of *Calopteron*, p. 120, *bivittatum* var. n. *morosum*, p. 121, BOURGEOIS, Ann. Soc. ent. France 1905.

- Laius diabolicus*, Sumatra, *rouyeri*, *carinaticeps*, Java, PIC, p. 104, Echange xxi; *L. variolosus*, miles, Ceylon, BOURGEOIS, p. 131, Ann. Soc. ent. France 1905 : **n. spp.**
- Luciola italica*, nature of light, PASSERINI, pp. 181-183, Bull. Soc. ent. Ital. xxxvi.
- L. horni*, *antennalis*, Ceylon, BOURGEOIS, p. 128, Ann. Soc. ent. France 1905; *L. gemina*, White Nile, OLIVIER, p. 9, Jägeraköld exp. No. 10a; *L. krugeri*, *mendax*, Africa, *nitescens*, Borneo, p. 206, *sordida*, Java, *calceata*, Pondichery, p. 207, OLIVIER, Ann. Soc. ent. Belgique 1905 : **n. spp.**
- Lycostomus nigricollis*, Kurseong, BOURGEOIS, p. 46, Ann. Soc. ent. Belgique 1905, **n. sp.**
- Lycus* (*Lycostomus*) *vaucheri*, Atlas, BOURGEOIS, p. 291, Bull. Soc. ent. France 1905, **n. sp.**
- Macrolampis*; redefined, p. 311, *M. omissus*, *elapsus*, p. 315, *roberti*, *frater*, *distinguendus*, p. 316, *transversenotatus*, *agonus*, p. 317, *meditabundus*, *cylindrus*, p. 318, **n. spp.**, S. America, OLIVIER, Ann. Soc. ent. France 1905.
- Malthinus bilineatus* var. *n. neapolitana*, PIC, p. 186, Echange 1906.
- M. nitidithorax*, p. 145, *terrestris*, p. 146, Algeria, PIC, t. c. **n. spp.**
- Malthodes maurus*; *Podistrina continua* is wingless ♀, BOURGEOIS, p. 238, Bull. Soc. ent. France 1905.
- M. gavoyi*, Aude, BOURGEOIS, p. 21, t. c.; *M. grandicornis*, Algeria, PIC, p. 106, Echange xxi; *M. cortadesi*, *inapicalis*, Algeria, PIC, p. 146, t. c.; *M.* (*Dalthomes* subg. *n.* p. 248) *bertolinii*, Italy, p. 248, FIORI, Riv. Col. ital. iii : **n. spp.**
- Malthodinus* subg. *n.* of *Maltharcus*, FIORI, p. 236, t. c.
- Mesomalthodes* *n. g.* for part of *Malthodes*, pp. 236, 250, FIORI, t. c.
- Mesopteron* *n. g.* for part of *Calopteron*, p. 123, *riveti* **n. sp.**, Ecuador, p. 125, BOURGEOIS, Ann. Soc. ent. France 1905.
- Metapteron* *n. g.* for part of *Calopteron*, BOURGEOIS, p. 126, t. c.
- Phengodes plumosa*, light of, KNAB, p. 239, Canad. Ent. 1905; *P. laticollis*, sexes, BARBER, p. 196, P. ent. Soc. Washington 1905; *P. hieronymi*, SCHWARZ, p. 197, t. c.
- Philhedonus sericeus*, p. 277, *rugulosus*, p. 278, S. Africa, GORHAM, P. Zool. Soc. London 1905, ii, **n. spp.**
- Photuris*, display of light, KNAB, p. 238, Canad. Ent. 1905.
- P. corvus*, Bolivia, p. 208, *vestita*, *subdola*, Brazil, p. 209, OLIVIER, Ann. Soc. ent. Belgique 1905, **n. spp.**
- Plateros* (*Planeteros*) *curtus*, *escalerae*, p. 194, *flavus*, p. 195, Spanish Guinea, BOURGEOIS, Mem. Soc. Espan. i, **n. spp.**
- Podabrus alpinus* var. *n. ruficeps*, GABRIEL, p. 142, Deutsche ent. Zeitschr. 1905.
- P. longissimus*, Japan, PIC, p. 113, Echange xxi, **n. sp.**
- Fromalthodes* *n. g.* for part of *Malthodes*, pp. 235, 240, FIORI, Riv. Col. ital. iii.
- Prothalmodes* subg. *n.* of *Malthodes*, FIORI, p. 239, t. c.
- Psilothrix* (*Dolichomorphus* subg. *n.*) *rufimanus*, Bologna, FIORI, p. 82, t. c. **n. sp.**
- Rhagonycha fulva*, oviposition, FRIEDRICH, p. 493, Zeitschr. Insbiol. i; *R. testacea* var. *n. taurinensis*, PIC, p. 105, Echange xxi.
- R. forticornis*, Bulghar Dag, PIC, p. 177, t. c.; *R. holtzi*, Greece, PIC, p. 186, t. c.; *R. (Absidia) vaulogeri*, Algeria, BOURGEOIS, p. 106, Bull. Soc. ent. France 1905; *R. drurei*, Kurdistan, PIC, p. 161, Echange xxi; *R. caroli*, Japan, PIC, p. 121, t. c. : **n. spp.**
- Selasia* (*Euptilia*) *horni*, Ceylon, BOURGEOIS, p. 130, Ann. Soc. ent. France 1905, **n. sp.**
- Silis ceylonica*, Kandy, BOURGEOIS, p. 129, Ann. Soc. ent. France 1905; 1905. [VOL. XLII.]

- S. spinicollis*, Madagascar, FAIRMAIRE, p. 124, Ann. Soc. ent. Belgique 1905 : n. sp.
Stadenus bolivari, Spanish Guinea, BOURGEOIS, p. 193, Mem. Soc. Espan. i, n. sp.
Telephorus; larval habits, REMER, pp. 12-14 z.-b. Sekt., Jahresber. Schlesisch. Ges. lxxxi.
T. testaceipes, Madagascar, FAIRMAIRE, p. 124, Ann. Soc. ent. Belgique 1905, n. sp.
Trichoceble fulvohirta and allies, FIORI, p. 87, Riv. Col. ital. iii.
Zelotypus horni, Ceylon, BOURGEOIS, p. 132, Ann. Soc. ent. France 1905, n. sp.
Zygia notaticollis, Obock, PIC, p. 130, Echange xxi; *Z. alluaudi*, E. Africa, PIC, p. 303, Bull. Soc. ent. France 1905 : n. spp.
Xylobanus cardoni, Bengal, BOURGEOIS, p. 48, Ann. Soc. ent. Belgique 1905, n. sp.

CLERIDÆ.

[Cf. GORHAM (676), HINTZ (750), SCHAEFFER (1324), SKINNER (1406), WICKHAM (1630).]

- Aphelochroa nigripes*, W. Africa, HINTZ, p. 308, Deutsche ent. Zeitschr. 1905, n. sp.
Cardiostichus; the W. African, HINTZ, p. 310, t. c.
Cephaloclerus tibialis, p. 311, *flavipes*, p. 312, W. Africa, HINTZ, t. c. n. spp.
Clerus quercus, p. 154, *pinus*, Arizona, *humeralis*, California, p. 155, SCHAEFFER, Bull. Brooklyn Inst. i : *C. bimaculatus*, Arizona, SKINNER, p. 291, Ent. News Philad. xvi : n. spp.
Cylidrus; colour-variation, etc., HINTZ, p. 305, Deutsche ent. Zeitschr. 1905.
Cymatodera; sex-characters, SCHAEFFER, pp. 152, 153, Bull. Brooklyn Inst. i.
C. uniformis, Arizona, p. 151, *santarosæ*, Lower California, p. 152, SCHAEFFER, t. c.; *C. tricolor*, Arizona, SKINNER, p. 292, Ent. News Philad. xvi : n. spp.
Dozocolletus sordidus, Algoa Bay, GORHAM, p. 274, P. Zool. Soc. London 1905, ii, n. sp.
Erymanthus ater, W. Africa, HINTZ, p. 309, Deutsche ent. Zeitschr. 1905, n. sp.
Euplacoceris dimidiatus var. = (*apicalis*), HINTZ, p. 311, t. c.
Gyponyx algoensis, p. 272, *braunsi*, p. 273, S. Africa, GORHAM, P. Zool. Soc. London 1905, ii, n. spp.
Hydnocera niveifuscia, Arizona, SCHAEFFER, p. 156, Bull. Brooklyn Inst. i; *H. knausii*, Kansas, WICKHAM, p. 168, Canad. Ent. 1905 : n. spp.
Necrobia pilifera var. n. *cupreonitens*, LAUFFER, p. 406, Bol. Soc. espan. v.
Opilo signatus, W. Africa, HINTZ, p. 307, Deutsche ent. Zeitschr. 1905, n. sp.
Orthopleuroides, characters; HINTZ, p. 313, t. c.
Ozytigmium cornutum, W. Africa, HINTZ, p. 309, t. c. n. sp.
Philoculus convexus, *elongatus*, W. Africa, HINTZ, p. 306, t. c. n. spp.
Phlæcopus niger, *rufipennis*, Africa, HINTZ, p. 307, t. c. n. spp.
Plathanocera albopunctata, W. Africa, HINTZ, p. 310, t. c. n. sp.
Tenerus orientalis to *Lacordairius*, HINTZ, p. 314, t. c.
T. marginalis, p. 312, *grandis*, *miniatus*, *auratus*, p. 313, W. Africa, HINTZ, t. c. n. spp.
Thanasimus ornatus, W. Africa, HINTZ, p. 308, t. c. n. sp.
Tillodenops n. g. p. 305, *brunneus*, n. sp., W. Africa, p. 306, HINTZ, t. c.
Thrioceru bicinctella, S. Africa, GORHAM, p. 274, P. Zool. Soc. London 1905, ii, n. sp.

PTINIDÆ.

[Cf. FALL (538), LEA (928), LEINBERG (934), PIC (1175, 1182, 1187, 1188, 1192).]

Revision of *Ptinids* of North America, FALL, pp. 97-295, Tr. Amer. ent. Soc. xxxi.

- Actenobius* n. g. for part of *Euceratocerus*, FALL, p. 155, t. c.
Anobiopsis n. g. p. 177, *sericans*, n. sp., California, p. 178, FALL, t. c.
Cænocara frontalis, p. 271, *blanchardi*, p. 273, *neomezicana*, p. 274, *tenuipalpa*, p. 275, *inepta*, *ovalis*, p. 276, N. America, FALL, t. c. n. spp.
Cathoramia cribrata, *goyosensis*, Brazil, PIC, p. 92, Naturaliste 1905 ; *C. vitiosum*, *impressifrons*, p. 234, *mutans*, p. 235, *grande*, *lentum*, *conophilum*, p. 236, *simplex*, *metasternale*, *inæquale*, p. 237, *gibbulum*, p. 238, *carinatum*, p. 239, *densum*, *dichroum*, *nigripenne*, p. 240, *dispar*, p. 241, *vestitum*, *placidum*, p. 242, *posticum*, *tumidum*, *nubilum*, p. 243, *longulum*, *uniforme*, *fastigiatum*, p. 244, *otiosum*, *congruum*, *vezatum*, p. 245, *porosum*, *convexum*, p. 247, *politum*, *triviale*, *conjunctum*, p. 248, *conobrinum*, p. 249, *pingue*, *vacuum*, p. 250, *cicatricosum*, *geminatum*, p. 251, *gracile*, *mancum*, *validum*, *confusum*, p. 252, *angustum*, p. 253, *parvum*, *turbidum*, p. 254, *indistinctum*, *exiguum*, p. 255, N. America, FALL, Tr. Amer. ent. Soc. xxxi : n. spp.
Celothethus americanus, p. 178, *alternatus*, *truncatus*, p. 188, FALL, t. c. n. spp.
Colposternus n. g. for *Trypopytes tenuilineatus* Horn, FALL, p. 190, t. c.
Cryptorama n. g. *oblongum*, Lower California, p. 256, *vorticale*, p. 257, n. spp., N. America, FALL, t. c.
Episernus granulatus var. n. *sulcatus*, LEINBERG, p. 18, *angulicollis* var. n. *striatulus*, p. 20.
E. tenuicollis, Finland, id., p. 21, t. c. n. sp.
Ernobius nigrinus and allies distinguished, GERHARDT, p. 221, Deutsche ent. Zeitschr. 1905.
E. socialis, p. 142, *convergens*, p. 143, *collaris*, *crotchii*, p. 144, *lacustris*, *fissuratus*, *nigrans*, p. 146, *pallitarsis*, *montanus*, p. 147, *opacus*, p. 149, *gentilis*, *trapezoides*, p. 151, N. America, FALL, Tr. Amer. ent. Soc. xxxi, n. spp.
Eupactus = (*Thaptor* Gorb.) *nactus*, *adventus*, *obsoletus*, p. 220, *amoenus*, *mixtus*, p. 221, *canonicus*, *similis*, p. 222, N. America, FALL, t. c. ; *E. dejeani*, Mexico, PIC, p. 115, Echange xxi ; *E. testaceipes*, Cuba, PIC, p. 92, Naturaliste 1905 : n. spp.
Euryliatus n. g. p. 264, *ulkei*, *levisternus*, p. 266, *fallax*, p. 267, *fucilis*, p. 268, n. spp., N. America, FALL, Tr. Amer. ent. Soc. xxxi.
Euvrilletta n. g. p. 196, *xyletinoides* n. sp., p. 197, California, FALL, t. c.
Hadrobregmus defectus, p. 182, *pusillus*, p. 183, *laticollis*, *umbrosus*, p. 184, N. America, FALL, t. c. n. spp.
Hedobia angulata, California, FALL, p. 130, t. c. n. sp.
Lasioderma bicolor, *semirufum*, *hemiptychoides*, N. America, FALL, p. 205, t. c. n. spp.
Megorama n. g. p. 206, *viduum*, p. 207, *ingens*, p. 208, n. spp., California, FALL, t. c.
Microbregma emarginatum var. n. *granicollis*, FALL, p. 185, t. c.
Microzogus n. g. *insolens* n. sp., Florida, FALL, p. 135, t. c.
Niptinus n. g. *oripennis* n. sp. p. 108, Texas, FALL, t. c.
Oligomerodes n. g. *occidentalis*, p. 161, *catalinae*, p. 162, n. spp., N. America, FALL, t. c.
Oligomerus tenellus, p. 164, *californicus*, p. 165, *brevipilis*, p. 166, n. spp., N. America, FALL, t. c.

- Ozognathus dubius*, Arizona, FALL, p. 137, t. c. **n. sp.**
Paralobium n. g. p. 152, *mundum n. sp.*, California, p. 153, FALL, t. c.
Pausoptinus n. g. p. 381, between *Pausidae* and *Ptinidae*, *laticornis n. sp.*, Australia, p. 382, pl. xxvii, f. 7, LEA, P. Soc. Victoria xvii.
Petalium fauveli, Guadeloupe, p. 188, *alluaudi*, Madagascar, *longipennis*, Brazil, p. 189, PIC, Rev. Ent. franc. 1905; *P. schwarzi*, p. 214, *yuccae*, *seriatum*, p. 215, *californicum*, p. 216, N. America, FALL, Tr. Amer. ent. Soc. xxxi: **n. spp.**
Priotoma gounellei, Brazil, PIC, p. 115, Echange xxi; *Priotoma* (sic) *minuta*, Caracas, PIC, p. 93, Naturaliste 1905: **n. spp.**
Pseudodorcatoma n. g. ornata n. sp., Guadeloupe, PIC, p. 171, Echange xxi.
Ptinus superbus (= *pyrenæus* PIC), REITTER, p. 200, Wien. ent. Zeit. xxiv.
P. (Gynopterius) barrosi, Portugal, PIC, p. 170, Echange xxi; *P. biscrensis*, Algeria, PIC, p. 106, t. c.; *P. alternatus*, *celebs*, p. 116, *agnatus*, *cognatus*, p. 118, *longivestis*, p. 119, *strangulatus*, p. 120, *tumidus*, p. 121, *prolixus*, p. 122, *hystrix*, *eximius*, p. 123, *concurrents*, *fallax*, *vegrandis*, p. 125, *feminalis*, p. 126, N. America, FALL, Tr. Amer. ent. Soc. xxxi, **n. spp.**
Stichoptychus n. g. agonus n. sp., Texas, FALL, p. 258, t. c.
Trichodesma klagesi, p. 173, N. America, *beyeri*, p. 174, Lower California, FALL, t. c. **n. spp.**
Utobium n. g. for elegans Horn, FALL, p. 134, t. c.
Vrilleta nigra, Mariposa, PIC, p. 171, Echange xxi; *V. blaisdelli*, p. 194, *laurentina*, p. 195, *plumbea*, p. 196, N. America, FALL, Tr. Amer. ent. Soc. xxxi: **n. spp.**
Xarifa n. g. p. 137, *insularis n. sp.*, California, p. 138, FALL, t. c.
Xeranobium n. g. laticeps, p. 158, *macrum*, p. 159, *desertum*, p. 160, **n. spp.**, N. America, FALL, t. c.
Xyletinus semilimbatus var. *testaceipennis*, PIC, p. 97, Echange xxi.
X. distans, p. 200, *harrisii*, p. 201, *gracilipes*, p. 203, N. America, FALL, Tr. Amer. ent. Soc. xxxi, **n. spp.**
Xyletomerus n. g. p. 197, *histricus n. sp.*, California, p. 198, FALL, t. c.

LYMEXYLONIDÆ, BOSTRICHIDÆ, CIOIDÆ.

- Atractocerus horni*, Ceylon, BOURGEOIS, p. 133, Ann. Soc. ent. France 1905, **n. sp.**
Bostrychopsis villosula n. n. for *cephalotes* Lesne non Olivier, LESNE, p. 298, Bull. Mus. Paris 1905.
Enneadesmus sculptifrons, Caffraria, LESNE, p. 275, Bull. Soc. ent. France 1905, **n. sp.**
Sinoxylon doliolum, E. Africa, p. 275, *cafrum*, S. Africa, p. 276, LESNE, t. c. **n. spp.**
Rhipidandrus: see *Tenebrionidæ*.

TENEBRIONIDÆ.

- [Cf. BROUN (194), CARTER (284), ESCALERA (523, 524), FAIRMAIRE (534, 535), GEBIEN (644-646), LEA (928), PIC (1184), REITTER (1244, 1246), SHARP (670).]
 GEBIEN gives a long list of corrigenda to the *Tenebrionidæ* of the Munich Catalogue, and to Champion's supplement thereto; Wien. ent. Zeit. xxiv, pp. 252-260.
 Table of the subfamilies of palaearctic *Tenebrionidæ*, REITTER, pp. 25-34, Verh. Ver. Brunn xlii.
 Twelve **spp. n.** *Tenebrionidæ*, Sinai, Crotch 1871 but not yet recorded, SHARP, p. 520, Ann. Nat. Hist. (7) xv.

- Adelium helmsi, reticulatum*, p. 181, *violaceum*, p. 182, *minor*, p. 183, *globulosum*, p. 184, Australia, CARTER, P. Linn. Soc. N. S. Wales xxx, n. spp.
- Adesmia jagerakioeldi*, White Nile, GEBIEN, p. 12, Jägerskiöld exp. No. 10a, n. sp.
- Akidini*, tables of palaearctic, REITTER, pp. 36-49, Verh. Ver. Brunn xlii.
- Akis melitana*, Malta, p. 40, *biskrensis*, Algeria, p. 41, REITTER, t. c. n. spp.
- Alæphus nitidipennis*, p. 275, California, *gracilis*, p. 276, Arizona, FALL, Canad. Ent. 1905, n. spp.
- Alphasida* subg. n. see *Asida*.
- Ammidanemia* subg. n. of *Anemia*, *asperula* Reitt. etc., REITTER, p. 132, Verh. Ver. Brunn xlii.
- Asida*; revision of Iberian, ESCALERA, pp. 377-402, 430-450, Bol. Soc. espan. v.
- A. (Alphasida) subg. n. p. 380) gaditana*, p. 385, *volcemi, becerra*, p. 387, *rufopubescent*, p. 388, *A. (Globasida) subg. n. p. 430) cartagenica*, p. 433, *intermedia, bacaresensis*, p. 435, *frigida, rotunda, novissima*, p. 436, *deformis, almeriana*, p. 437, *nerjensis*, p. 438, *segurensis, quadrata*, p. 439, *dubiosa, curvatipennis*, p. 440, Iberian peninsula, ESCALERA, t. c. n. spp.
- Asidelia* n. g. near *Nyctelia*, *contracta* n. sp., Argentina, FAIRMAIRE, p. 296, Ann. Soc. ent. France 1905.
- Aulonolcus* subg. n. of *Lobothorax*, for *altaicus* Gebl., REITTER, p. 168, Verh. Ver. Brunn xlii.
- Cabirus dentimanus*, Samarcand, p. 64, *procerulus*, Aulie-Ata, p. 65, *puncticollis*, Buchara, *gracilis*, Mardin, p. 66, *castaneus*, Jerusalem, *subpubescens*, Beyrout, p. 67, *desbrochersi, simonis*, Syria, p. 68, REITTER, t. c. n. spp.
- Callismilax bavayi, variolosa*, p. 216, *interrupta, fulgurans*, p. 217, *coelestina, numensis*, p. 218, *externa, basalis, suturalis*, p. 220, *arcitenens*, p. 221, *caviceps, gloriosa*, p. 222, *semiviolacea, plicicollis, auripennis*, p. 223, *virescens, sulcipennis*, p. 224, *setigera*, p. 225, New Caledonia, FAUVEL, Rev. Ent. franc. xxiv, n. spp.
- Camaria tenuistriata*, p. 126, *semiscescens*, p. 127, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique 1905; *C. obtusa*, p. 300, *impressifrons, biaculeata*, p. 301, Argentina, FAIRMAIRE, Ann. Soc. ent. France 1905: n. spp.
- Cerostena infravestita*, p. 297, *semistrigosa*, p. 298, Argentina, FAIRMAIRE, t. c. n. spp.
- Cilibe costella*, New Zealand, BROWN, p. 544, Ann. Nat. Hist. (7) xv, n. sp.
- Colpopatrum* subg. n. of *Opatrum*, for *asperipenne* Reitt., REITTER, p. 148, Verh. Ver. Brunn xlii.
- Colpotus punctipleuris*, Asia Minor, REITTER, p. 63, t. c. n. sp.
- Coripera morleyana*, p. 184, *distincta*, p. 185, N. S. Wales, CARTER, P. Linn. Soc. N. S. Wales xxx, n. spp.
- Dendaroscelis* subg. n. cf. *Dendarus*.
- Dendarus (Pandarinus) seidlitzii*, Dalmatia, p. 80, *vagabundus* (n. n. for *vagus* Reitt.), Transcaspien, p. 84, *D. scoparipes*, Cerigo, p. 86, *D. (Dendaroscelis) subg. n.) serripes*, Spain, p. 92, REITTER, Verh. Ver. Brunn xlii, n. spp.
- Diastolinus acuticollis, quadricollis, fortipes*, Argentina, FAIRMAIRE, p. 299, Ann. Soc. ent. France 1905, n. spp.
- Dietopsis bucculata, tenuis*, Tucuman, FAIRMAIRE, p. 302, t. c. n. spp.
- Dilamus bohmi*, Egypt, REITTER, p. 71, Verh. Ver. Brunn xlii, n. sp.
- Discotus* subg. n. cf. *Lobothorax*.
- Ectomopsis* n. g. near *Camarimena*, p. 299, *bruchi* n. sp., Argentina, p. 300, FAIRMAIRE, Ann. Soc. ent. France 1905.

- Eledona*; structure of feet, relations with *Rhipidandrus*, SHARP, Biol. Centr.-Amer. Col. ii, pt. 1, p. 690.
- Emallodera granocostata, strangulata*, Argentina, FAIRMAIRE, p. 290, Ann. Soc. ent. France 1905, **n. spp.**
- Encara nigrum*, N. S. Wales CARTER, p. 178, P. Linn. Soc. N. S. Wales **xxx**, **n. sp.**
- Entomoderes pustulosus*, Argentina, FAIRMAIRE, p. 298, Ann. Soc. ent. France 1905, **n. sp.**
- Epipedonota planiuscula*, Argentina, FAIRMAIRE, p. 297, t. c. **n. sp.**
- Eulipus quirogai*, Rio de Oro, ESCALERA, p. 468, Bol. Soc. espan. v, **n. sp.**
- Eumylada* subg. n. of *Myladina, punctifera* Reitt. etc., REITTER, p. 170, Verh. Ver. Brunn xlii.
- Eurycaulus* (*Scleronimon* subg. n.) *peyerimhoffi*, Sinai, *granulatus*, Egypt, REITTER, t. c. **n. spp.**
- Eustenia* n. g. near *Praogena, tenuimembris* n. sp., Tucuman, FAIRMAIRE, p. 303, Ann. Soc. ent. France 1905.
- Globasida* subg. n. see *Asida*.
- Gonocephalum arisi*, Transcaspian, REITTER, p. 92, Wien. ent. Zeit. xxiv, **n. sp.**
- Gonocephalum quadrinodosum*, China, p. 146, *G. (Megadasus* subg. n. p. 146) *subsetosum*, Canton, p. 147, REITTER, Verh. Ver. Brunn xlii, **n. spp.**
- Heliocrates* subg. n. cf. *Heliophilus*.
- Heliophilus* (*Heliocrates* subg. n.) *strigosus*, p. 98, *humerangulus*, Andalusia, *sulcipennis*, Escorial, p. 99, *H. parcefoveatus*, Spain and Portugal, p. 100, *immarginatus, conjunctus*, p. 101, *heydeni, sculpturatus*, p. 102, *subimpressus*, p. 103, Spain, REITTER, t. c. **n. spp.**
- Hemitriches* subg. n. of *Lobothorax* for *hirsutus* Reitt., REITTER, p. 169, t. c.
- Heterophylus seriepunctatus*, Algeria, p. 69, *tibialis*, Transcaspian, p. 70, REITTER, t. c. **n. spp.**
- Heterotarsus insularis*, Madagascar, FAIRMAIRE, p. 125, Ann. Soc. ent. Belgique 1905, **n. sp.**
- Hoplambius* subg. n. of *Melambius, Hoplarion melamboides*, REITTER, p. 114, Verh. Ver. Brunn xlii.
- Hoplariobius* subg. n. of *Micrositus* for *decurvatus* Fairm., etc., REITTER, p. 115, t. c.
- Isocerus cameroni*, Portugal, REITTER, p. 78, t. c. **n. sp.**
- Japetus* subg. n. of *Lobothorax* for *Opatrum melanarium* Er., REITTER, p. 160, t. c.
- Lesbidana* subg. n. cf. *Melanesthes*.
- Litoborus subtilimargo*, Algeria, REITTER, p. 113, Verh. Ver. Brunn xlii, **n. sp.**
- Litororus* subg. n. of *Olocrates* for *semicostatus* Muls., REITTER, p. 96, t. c.
- Lobothorax* (*Discotus* subg. n. p. 161) *netuschili*, Chinese Turkestan, p. 162, *L. auliensis*, Aulie-Ata, p. 163, *oblongopunctatus*, Transcaspian, p. 164, REITTER, t. c. **n. spp.**
- Megadasus* subg. n. cf. *Gonocephalum*.
- Melanesthes* (*Lesbidana* subg. n. p. 173) *coriaria*, Turkestan, p. 173, REITTER, Verh. Ver. Brunn xlii, **n. sp.**
- Melulocrates* subg. n. of *Olocrates, planiusculus* and *viaticus* Muls., REITTER, p. 96, t. c.
- Menephilus aeneus*, Sydney, CARTER, p. 179, P. Linn. Soc. N. S. Wales **xxx**, **n. sp.**
- Mesomorphus* n. g. p. 73, *varendorffi*, Madeira or Congo, *dermestoides*, Centr. China, p. 74, **n. spp.**, REITTER, Verh. Ver. Brunn xlii.
- Micronitus opacus*, Besika Bay, p. 116, *M. (Platyolus) tenebrioides*, Huelva,

- p. 118, *milleri*, p. 120, *lapidarius*, p. 121, Andalusia, REITTER, t. c. n. spp.
- Miglica* subg. n. of *Melanesthes* for *laticollis* Gebl., REITTER, p. 171, t. c.
- Mogadoria* n. g. for *Eulipus subelegans* Fairm., ESCALERA, p. 467, Bol. Soc. espan. v.
- Mongolesthes* subg. n. of *Melanesthes* for *heydeni* Csiki, REITTER, p. 174, Verh. Ver. Brunn xlii.
- Morica pharao* Egypt, REITTER, p. 38, t. c. n. sp.
- Netuschilia* n. g. for *Lachnopus hauseri*, REITTER, p. 35, t. c.
- Nyctelia timarchoides*, *nuturacava*, p. 291, *geometrica*, *confuens*, *discoidalis*, *exasperata*, p. 292, *biapoides*, *pinguis*, *quadricarinata*, p. 293, *unicostata*, *bifoveata*, *planicauda*, p. 294, *producta*, *dorsata*, *crassecostata*, p. 295, *quadricollis*, p. 296, Argentina, FAIRMAIRE, Ann. Soc. ent. France 1905, n. spp.
- Nycteropus protensus*, *chrysocalceus*, p. 125, *attenuatus*, *crassicollis*, p. 126, Madagascar, FAIRMAIRE, p. 126, Ann. Soc. ent. Belgique 1905, n. spp.
- Ockrolamus* subg. n. of *Dilamus* for *pictus* Mars., REITTER, Verh. Ver. Brunn xlii.
- Olocorates italicus*, Italy, p. 93, *hamilcaris*, Andalusia, p. 94, *subheliopates*, Spain, p. 95, REITTER, t. c. n. spp.
- Opatrini*; the palaearctic tabulated, REITTER, pp. 106-182, t. c.
- Opatromesthes* subg. n. of *Melanesthes* for *punctipennis* Reitt., REITTER, p. 174, t. c.
- Opatrum tebesanum*, Algeria, p. 153, *cypræum*, Cyprus, p. 155, *italicum*, Ischia, p. 156, *alutaceum*, Khartoum, p. 158, REITTER, t. c. n. spp.
- Otrintus jacksoni*, N. S. Wales, CARTER, p. 180, P. Linn. Soc. N. S. Wales xxx, n. sp.
- Pachypterus serrulatus*, Caucasus, REITTER, p. 75, Verh. Ver. Brunn xlii, n. sp.
- Pedinus bodemeyeri*, Asia Minor, p. 56, *paradoxus*, Syria, p. 59, *strigicollis*, Taurus, p. 61, REITTER, t. c. n. spp.
- Pentholasius* subg. n. of *Clitobius* for *variolatus* Allard, REITTER, p. 178, t. c.
- Penthomagus* subg. n. of *Lobothorax* for *granulosus* Mén. etc., REITTER, p. 162, t. c.
- Phobelius semigranosus*, Tucuman, FAIRMAIRE, p. 300, Ann. Soc. ent. France 1905, n. sp.
- Phylax insignis*, Syria, REITTER, p. 110, Verh. Ver. Brunn xlii, n. sp.
- Piloxy perrieri*, Madagascar, FAIRMAIRE, p. 127, Ann. Soc. ent. Belgique 1905, n. sp.
- Pimelia punctata* var. n. *manchega*, LAUFFER, p. 406, Bol. Soc. espan. v.
- Psectrascelis coriaria*, Argentina, FAIRMAIRE, p. 297, Ann. Soc. ent. France 1905, n. sp.
- Pseudogena semiopaca*, Madagascar, FAIRMAIRE, p. 126, Ann. Soc. ent. Belgique 1905, n. sp.
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- Rhipidandrus mexicanus*, *championi*, Centr. America, SHARP, p. 691, t. c. n. spp.
- Rhizalemus* subg. n. of *Dendarus*, *D. pauper*, etc., REITTER, p. 90, Verh. Ver. Brunn xlii.
- Scleron æquale*, Arabia, p. 124, *subclathratum*, Egypt, p. 125, *discicollis*, India and Java, p. 126, REITTER, t. c. n. spp.
- Scleronimon* subg. n. cf. *Eurycaulus*.
- Scotobius caruboides*, *cribricollis*, *quadricostatus*, Argentina, FAIRMAIRE, p. 289, Ann. Soc. ent. France 1905, n. spp.

Solskya subperegrina, Turkestan, REITTER, p. 49, Verh. Ver. Brunn xlii, n. sp.

Stenopsis punica, Tunis, PIC, p. 98, Echange xxi, n. sp.

Tenebrio noctivagus var. n. *intermedius*, FIORI, p. 226, Riv. Col. ital. i; *T.*, parthenogenetic eggs, SALING, Zool. Anz. xxix, pp. 587-590.

Theilea mirabilis, p. 210, *kanalensis*, *politula*, *versicolor*, p. 211, *purpurea*, p. 213, New Caledonia, FAUVEL, Rev. Ent. franc. xxiv, n. spp.

Trachymetus n. g. for *Pachypterus elongatus* Muls., REITTER, p. 76, Verh. Ver. Brunn xlii.

Tribolium myrmecophilum, Australia, LEA, p. 383, P. Soc. Victoria xvii, n. sp.

CISTELIDÆ.

[Cf. BEDEL (92), FAIRMAIRE (535), FAUVEL (550A), PIC (1191, 1193), SCHAEFFER (1324).]

Alethia carbonaria, Arizona, SCHAEFFER, p. 176, Bull. Brooklyn Inst. i, n. sp.

Alloecula strigicollis, p. 227, *rugicollis*, p. 228, *quadrillum*, p. 229, *phyllocera*, *simplex*, p. 230, *tenuicornis*, p. 231, *pusilla*, *insulana*, p. 232, *lavior*, *cupreipennis*, p. 233, *umbonata*, p. 234, *montana*, *curticollis*, p. 235, *anthracina*, *opacula*, p. 236, New Caledonia, FAUVEL, Rev. Ent. franc. xxiv, n. spp.

Crypticus vaucheri, Marocco, BEDEL, p. 272, Bull. Soc. ent. France 1905, n. sp.

Ctenopus angustatus, Mesopotamia, PIC, p. 177, Echange xxi, n. sp.

Hymenalia obscuripennis, Adana, PIC, p. 162, Echange xxi, n. sp.

Lystronychus humeralis, Tucuman, FAIRMAIRE, p. 302, Ann. Soc. ent. France 1905, n. sp.

Omophilus splendidus, Marocco, BEDEL, p. 272, Bull. Soc. ent. France 1905, n. sp.

Phodius funereus, Arizona, SCHAEFFER, p. 176, Bull. Brooklyn Inst. i, n. sp.

MELANDRYIDÆ.

Phryganophilus ruficollis var. n. *rostri* (= *Melandrya ruficollis* Lewis). HUBENTHAL, p. 57, Deutsche ent. Zeitschr. 1905.

Abdera viberti, Algeria, PIC, p. 98, Echange xxi, n. sp.

Phlaotrya nebulosa, p. 237, *lancifera*, p. 238, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, n. spp.

LAGRIIDÆ.

Nemostira vittulata, *fuscipennis*, p. 127, *striatopunctata*, p. 128, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique 1905, n. spp.

Statira defecta, p. 175, *huachucae*, p. 176, Arizona, SCHAEFFER, Bull. Brooklyn Inst. i; *S. simulans*, Texas, *robusta*, Arizona, SCHAEFFER, p. 180, J. N. York Ent. Soc. : n. spp.

XYLOPHILIDÆ, ANTHICIDÆ.

[Cf. CARTER (284), PIC (1170, 1172, 1176-1178, 1187, 1196), REITTER (1249).]

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- Anthicus latedecoratus* var. n. *rostri*, PIC, p. 113, Echange xxi; *A. salsola* Motsch. is *Stenidius tenuipes* Laf., *umbrinus* Laf. is *terrestris* Motsch., *marinus* Motsch. is *dentatus* Pic, *liquidus* Motsch. is *tristis* Sch., *impressus* Motsch. = *tenellus* Laf. = *transversalis* Villa, p. 491, *A. palustris* n. n. for *lucustris* Motsch. p. 490, PIC, Annuaire Mus. St. Petersb. ix.
- A. fœdus*, *A. (Lappus) proprius*, p. 492, *distincticeps*, Peru, *herzi*, Transcaspian, p. 493, PIC, Annuaire Mus. St. Petersb. ix; *A. arisi*, Samarcand, PIC, p. 186, Echange 1905; *A. lobatus*, Algeria, *remotus*, Fiji, PIC, p. 99, Bull. Soc. ent. France 1905: n. spp.
- Egestria albilineata*, N. S. Wales, CARTER, p. 189, P. Linn. Soc. N. S. Wales xxx, n. sp.
- Formicilla punctata*, N. America, PIC, p. 491, Annuaire Mus. St. Petersb. ix, n. sp.
- Formicomus sterbae*, Turkestan, REITTER, p. 206, Wien. ent. Zeit. xxiv; *F. bozasi*, p. 242, *subrutilus*, p. 243, Africa, PIC, Bull. Mus. Paris 1905: n. spp.
- Hylophilus bottegoides*, Lago, p. 197, *diversicornis*, Natal, p. 199, *punctatus*, Loyalty Ids., p. 204, *H. (Emelinus) magniceps*, p. 267, *H. (Elonus) distincticornis*, *H. (Scanylus) vicinus*, *H. (Vanonus) semibrunneus*, p. 268, *H. apicipennis*, *H. (Zonantes) obscuricolor*, *rufithorax*, p. 269, Brazil, *H. (Olotelus) apicalis*, S. Africa, p. 282, PIC, Ann. Soc. ent. France 1905; *H. escaleraei*, *niger*, p. 203, *inimpressus*, *longus*, *validicornis*, p. 204, *bolivari*, p. 205, *dentatipes*, p. 206, *cephalotes*, *dispar*, *biafrensis*, p. 207, Spanish Guinea, PIC, Mem. Soc. Espan. i: n. spp.
- Macratia basithorax*, Shanghai, PIC, p. 48, Bull. Soc. ent. France 1905, n. sp.
- Macrotagon carinicolleis*, New Caledonia, FAUVEL, p. 242, Rev. Ent. franc. 1905, n. sp.
- Notoxus trifasciatus* var. n. *rostri*, PIC, p. 113, Echange xxi.
- Trotonma latipennis*, Tunis, PIC, p. 130, t. c. n. sp.
- Vanonus* (= *Tanilotes*) *fusciceps*, *congener*, N. America, CASEY, p. 163, Canad. Ent. 1905, n. spp.

RHIPIPHORIDÆ.

- Metoeus paradoxus*, note on, CRAWSHAY, p. 45, Ent. Mag. 1905.
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Elenchus tenuicornis ♂ and ♀, pp. 106, 107, pls. i, ii, iii, PERKINS, t. c.

Halictophagus (*Bruesia* subg. n. p. 102) *australensis*, *phæodes*, p. 103, *stenodes*, *H. ? schwarzi*, p. 104, Australia, *americanus*, Ohio, p. 105, PERKINS, t. c. n. spp.

Megalechthrus n. g. p. 105, *tryoni* n. sp., Queensland, p. 106, PERKINS, t. c.

Xenos nigrescens, triungulin, p. 290, cuts, *X. pallidus* ♀, cut, p. 295, habits, BRUES, Biol. Bull. viii.

MORDELLIDÆ.

[Cf. FAIRMAIRE (534), FAUVEL (550A).]

Anaspis (*Silaria*) *numensis*, New Caledonia, FAUVEL, p. 241, Rev. Ent. franc. 1905, n. sp.*Glipa longipennis*, Madagascar, FAIRMAIRE, p. 128, Ann. Soc. ent. Belgique 1905, n. sp.*Mordella polyspila*, *aurocordata*, *ornata*, to *Glipa*, FAIRMAIRE, p. 128, t. c. *M. scutellaris*, p. 128, *latefasciata*, p. 129, Madagascar, FAIRMAIRE, t. c. n. spp.*Mordellistena caledonica*, New Caledonia, FAUVEL, p. 240, Rev. Ent. franc. 1905, n. sp.

CANTHARIDÆ.

[Cf. FAUVEL (550A), PIC (1187), REITTER (1248, 1254), SCHAEFFER (1323, 1324), WICKHAM (1630).]

Meloide of western France, HOULBERT & BÉTIS (784).*Alostimus viridissimus* var. n. *bipartitus*, PIC, p. 107, Echange xxi.*A. atripes*, Persia, PIC, p. 130, t. c. n. sp.*Epicauta obsкуроcephala*, Tien-tsin, REITTER, p. 195, Wien. ent. Zeit. xxxiv, n. sp.*Isopentra* merged in *Epicauta*, REITTER, l. c.*Lydus tenuicollis*, Persia, REITTER, p. 246, t. c. n. sp.*Meloe matthieseni*, *frontalis*, Persia, REITTER, p. 245, t. c. n. spp.*Pyrota virgata* and *tenuicostatis*, SCHAEFFER, pp. 177, 178, Bull. Brooklyn Inst. i.*Zonabris curta*, *wagneri*, pp. 167-170, *Z. curta* var. n. *ernesti*, p. 170, PIC, Rev. Sci. Bourbonnais 1905.*Zonitis dunniana* and *perforata* Cas. to *Nemognatha*, SCHAEFFER, p. 138, Bull. Brooklyn Inst. i.*Z. nigripennis*, p. 243, *atriceps*, p. 244, New Caledonia, FAUVEL, Rev. Ent. franc. xxiv; *Z. vermiculatus*, Utah, SCHAEFFER, p. 138, Bull. Brooklyn Inst. i; *Z. sayi*, *californica*, N. America, WICKHAM, p. 171, Canad. Ent. 1905 : n. spp.

PYTHIDÆ.

[Cf. PIC (1182, 1188), REITTER (1255).]

Lanthanus latissimus, Bolivia, PIC, p. 116, Echange xxi, n. sp.*Rhinosimus caucasicus*, Caucasus, REITTER, p. 312, Wien. ent. Zeit. xxiv;*R. cæruleus*, New Guinea, PIC, p. 93, Naturaliste 1905 : n. spp.

EDEMERIDÆ.

Edemera virescens var. n. *cupreomicans*, REITTER, p. 93, Wien. ent. Zeit. xxiv.*E. laufferi*, Spain, REITTER, p. 206, t. c. n. sp.*Pseudolyceus montanus*, p. 187, *rufipennis*, p. 188, N. S. Wales, CARTER, P. Linn. Soc. N. S. Wales xxx, n. spp.

CURCULIONIDÆ.

[Cf. AURIVILLIUS (42), BEDEL (91), BEGUIN-BILLECOCQ (93, 94), BROUW (194), CAMERON (237), CHAMPION (670), CHITTENDEN (307, 308), CORTI (372), DEMBROCHERS (399), FAIRMAIRE (534), FIORI (564, 567), FLACH (574), FORMÁNEK (593, 594), HARTMANN (726, 727), HELLER (736, 737),

HOLDHAUS & WAGNER (754), HUNTER & HINDS (798, 799), LEA (924, 925), LESNE (943), MARSHALL (1010), PETRI (1157), PIC (1184, 1187, 1189-1191, 1193), REITTER (1254, 1256), RITSEMA (1275), SCHAEFFER (1323, 1324), SCHULTZE (1357), SSILANTJEW (1441, 1442), VETH (1547), VITALE (1554), WAGNER (1556).]

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Acalles rolleti var. *cynura*, VITALE, p. 44, Riv. Col. ital. i; *A. cunctana*, pl. xxiii, fig. 16, p. 476, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4; *A. mutillarius* Gerst. to *Gerstaecteria* n. g. and figured, pl. xxiii, fig. 5, CHAMPION, p. 472, t. c.

A. solarii, Italy, FIORI, p. 163, Riv. Col. ital. i; *A. algiricus*, Algeria, PIC, p. 99, Echange xxi; *A. rugirostris*, pl. xxiii, fig. 9, *lutescens*, fig. 10, p. 473, *fulvovittatus*, fig. 11, *cinericius*, fig. 12, *cavicolis*, fig. 13, p. 474, *indutus*, fig. 14, *rufotuberculatus*, fig. 15, p. 475, *quadrituberculatus*, *rugulosus*, p. 476, *tricinctus*, fig. 17, *foveolatus*, *crassisetis*, p. 477, *horrens*, *tantillus*, p. 478, *exaratus*, p. 479, Centr. America, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4: n. spp.

Acicnemis spinipennis, New Guinea, HELLER, p. 73, Deutsche ent. Zeitschr. 1905, n. sp.

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Æmus n. g. near *Conotrachelus*, *tuberosus* n. sp., Panama, pl. xxii, fig. 2, CHAMPION, p. 445, t. c.

Ænesias n. g. near *Conotrachelus*, *tuberculiostriis*, pl. xxii, fig. 7, p. 452, *nigronotatus*, fig. 8, *cavifrons*, p. 453, n. spp., Centr. America, CHAMPION, t. c.

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- Atrichis occidentalis* pl. xxvi, fig. 19, p. 534, *costirostris*, fig. 20, *semicostatus*, p. 535, *nubilans*, fig. 21, p. 536, Centr. America, CHAMPION, t. c. n. spp.
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- Brachycerus undatus* var. n. *tyre*, VITALE, p. 206, Riv. Col. ital. iii; *B. algirus* var. *attenuatus*, VITALE, p. 42, op. cit. i.
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- C. thalhammeri*, Hungary, SCHULTZE, p. 7, t. c. n. sp.
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- Chalcocrybeus insignis*, p. 72, *erarmatus*, p. 73, New Guinea, HELLER, Deutsche ent. Zeitschr. 1905, n. spp.
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- Læmanicus plagiatus* and *texana*, SCHAEFFER, p. 140, Bull. Brooklyn Inst. i.
- Larinus zancleanus*, Sicily, VITALE, p. 128, Riv. Col. ital. ii, **n. sp.**
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- Mazagranius* subg. n. cf. *Amaurorrhinus*.
- Mecinus villosulus*, gall, HOUARD, pp. 41-51, Marcellia iv.
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- Mecolenus* referred to *Apionidae*, BEGUIN-BILLECOQ, p. 43, Bull. Soc. ent. France 1905.
- Mecysolobus* n. g. near *Lixus*, *lixoides* n. sp., Amurland, REITTER, p. 248, Wien. ent. Zeit. xxiv.
- Megarhinus collaris*, W. Africa, HARTMANN, p. 270, Deutsche ent. Zeitschr. 1905, n. sp.
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- O. walkeri*, PERIM, CAMERON, p. 179, Ent. Mag. 1905, n. sp.
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- Oxyonyx litipennis*, Algeria, PIC, p. 130, Echange xxi, n. sp.
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- Pachyonyx squamosulus*, Madagascar, FAIRMAIRE, p. 130, Ann. Soc. ent. Belgique 1905, n. sp.
- Pachyrhynchus plutus* = (*hiplagiatus* Bates), *biplagiatus* Guér. = (*salomonis* Hell.), referred to *Pantorhytes*, HELLER, pp. 305-307, Wien. ent. Zeit. xxiv.
- Pachytychius albomaculatus*, Algeria, PIC, p. 99, Echange xxi, n. sp.
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- Rhinochenus stigma*, pl. xxvi, figg. 23, 24, variation, p. 538, CHAMPTON, Biol. Centr.-Amer. Col. iv, pt. 4.
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- Sibinia cedrorum*, Algeria, PIC, p. 155, Echange xxi, n. sp.
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- Synomus æruginosus*, Queensland, LEA, p. 221, Tr. R. Soc. S. Austral. xxix, n. sp.
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- Trachyphleus beaupres*, Algeria, PIC, p. 155, Echange xxi, n. sp.
- Troglorhynchus* (*Solariella* subg. n.) *paganettii*, Calabria, FLACH, p. 318, Wien. ent. Zeit. xxiv, n. sp.
- Tychius sinaiticus* Crotch, 1871, n. sp. but not yet recorded, SHARP, p. 590, Ann. Nat. Hist. (7) xv; *T. vaulogeri*, Algeria, PIC, p. 107, Echange xxi; *T. ciliciensis*, Taurus, PIC, p. 162, t. c. n. spp.
- Tyloderma aneotinctum*, Mexico, CHAMPION, p. 528, pl. xxvi, fig. 10, Biol. Centr.-Amer. Col. iv, pt. 4, n. sp.
- Tylodinus* n. g. p. 464, type *Tylodes nodulosus* Schönh., figured, pl. xxii, fig. 26, and as n. spp., *planicollis*, fig. 27, *quadrilamellatus*, fig. 28, p. 465, *foedus*, fig. 30, *16-tuberculatus*, fig. 29, *maculifrons*, pl. xxiii, fig. 1, p. 466, *canaliculatus*, fig. 2, *leucozona*, fig. 3, p. 467, *cavicus*, fig. 4, *callosus*, p. 468, Centr. America, CHAMPION, t. c. n. spp.
- Tyrannion* n. g. near *Eubulus*, *validus*, pl. xxix, fig. 8, p. 593, *tricoloratus*, fig. 9, *fulvipennis*, fig. 11, p. 594, *scabidus*, fig. 10, *nigrosellatus*, fig. 12, p. 595, *irregularis*, fig. 13, *suffusus*, fig. 14, p. 596, *diffusus*, *picilis*, fig. 15, *disparilis*, fig. 16, p. 597, *ochreopunctatus*, fig. 17, *punctipennis*, fig. 18, p. 598, *funestus*, *imbellis*, *admixtus*, p. 599, *stolidus*, *squalidus*, p. 600, n. spp., Centr. America, CHAMPION, t. c.
- Ulosomus* n. g. near *Ulosomus*, *quadrifasciculatus*, pl. xxiii, fig. 25, *ruinensis*, p. 483, *nanus*, *quichensis*, *triseriatus*, fig. 26, p. 484, *angustatus*, p. 425, n. spp., Centr. America, CHAMPION, t. c.
- Xenosomus inflatus*, pl. xxiii, fig. 5, *turpis*, Guatemala, CHAMPION, p. 469, t. c. n. spp.
- Zascelis irrorata* Lec. pl. xxvi, fig. 3, p. 523, *affaber*, fig. 5, p. 524, CHAMPION, t. c.
- Z. carinipes*, pl. xxvi, fig. 4, p. 523, *brevicollis*, fig. 6, p. 524, *sulcifrons*, p. 7, *rugosa*, p. 525, *glabrata*, fig. 8, p. 526, Centr. America, CHAMPION, t. c. n. spp.

SCOLYTIDÆ.

[Cf. EICHELBAUM (489), FUCHS (625), HAGEDORN (713, 714), HOPKINS (758-760), NÜSIMA (1110), REITTER (1254), SCHAUFUSS (1328), SCHWYREW (1330), SCHOLZ (1338).]

The habits of European *Scolytidæ*, SCHWYREW (1330).

The mouth parts of the larvae, HOPKINS, pp. 143-149, pls. iv, v, P. ent. Soc. Washington vii.

The stridulating organs in *Scolytus*, SCHOLZ, Ins. Börse 1905, pp. 143, 144.

Translation of Eichhoff's table of food plants and form of galleries of European, GROUZELLE, Echange xxi, pp. 149 etc.

Amphicranus, synopsis, p. 289, *A. elegans*, pl. ix, fig. 5, p. 290, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6.

Amphicranus leseiei, Columbia, HAGEDORN, p. 550, Bull. Mus. Paris x; *A. balticus*, pl. ix, fig. 6, p. 291, *belti*, fig. 7, *tormentes*, fig. 8, p. 292, *brevipennis*, fig. 9, Centr. America, *schaufussi*, Venezuela, p. 293, *grouvellei*, Brazil?, *collaris*, fig. 10, p. 294, *tenuis*, fig. 11, *filiformis*, fig. 12, p. 295, *terebella*, fig. 13, *fastigatus*, fig. 14, p. 296, *propugnatus*, fig. 15, p. 297, *hybridus*, fig. 16, p. 298, Centr. America; id. t. c. n. spp.

Camplocerna striatulus, Guiana, HAGEDORN, p. 547, Bull. Mus. Paris x, n. sp. *Chortastus* n. g. *Hylesinides*, *camerunus* n. sp., W. Africa, SCHAUFUSS, p. 15, Ins. Börse 1905.

Coccotrypes pygmaeus, habits and localities, SCHAUFUSS, p. 8, Ins. Börse 1905.

- C. cardamomi*, Ceylon, SCHAUFUSS, p. 8, t. c. n. sp.
Crossotarsus banghaasi, E. Africa, p. 87, *cælocephalus*, Cameroons, p. 103, SCHAUFUSS, t. c. n. spp.
Cryphalus grothii, larva, EICHELBAUM, pp. 248-250, Zeitschr. Insbiol. i.
Cryptinorkinus n. g. p. 131, *chloropholoides* n. sp., Madagascar, p. 132, FAIRMAIRE, Ann. Soc. ent. Belgique 1905.
Dacryostactus n. g. *Hyletinides kolbei* n. sp., S. Africa, SCHAUFUSS, p. 79, Ins. Börse 1905.
Dendroctonus ponderosus, natural history and ravages, HOPKINS, Bull. U. S. Dep. Agric. Ent. No. 56.
D. mexicanus, Amecameca, HOPKINS, p. 80, P. ent. Soc. Washington vii, n. sp.
Gnathotrichus nitidifrons, Mexico, HOPKINS, p. 72, t. c. n. sp.
Hylesinus ornatus, Centr. Europe, FUCHS, p. 51, Munchen. Kol. Zeitschr. iii, n. sp.
Lissoclastus n. g. *Hyletinides pimelioides* n. sp., Cameroons, SCHAUFUSS, p. 71, Ins. Börse 1905.
Meringopalpus n. g. *Hyletinidarum*, p. 547, *fallax* n. sp., Venezuela, p. 548, HAGEDORN, Bull. Mus. Paris x.
Mitosoma rugosum, Madagascar, SCHAUFUSS, p. 19, Ins. Börse 1905, n. sp.
Phlaeothorus moriperda, Mexico, HOPKINS, p. 77, P. ent. Soc. Washington vii, n. sp.
Phlaosinus tacubaya, p. 78, *baumanni*, p. 79, Mexico, HOPKINS, t. c. n. spp.
Phthorinus edentatus, Venezuela, HAGEDORN, p. 549, Bull. Mus. Paris x, n. sp.
Pityophthorus chalenensis, p. 73, *herrerai*, p. 74, Mexico, HOPKINS, P. ent. Soc. Washington vii, n. spp.
Platypus pini, Mexico, HOPKINS, p. 71, t. c. n. sp.
Pterocyclon dimidiatum, Guiana, HAGEDORN, p. 550, Bull. Mus. Paris x ; *P. bispinum*, p. 281, pl. viii, fig. 19, *vittatum*, fig. 20, p. 282, *sulcatum*, *ferrarii*, fig. 23, p. 284, *fimbriaticorne*, fig. 24, p. 285, Centr. America, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6 : n. spp.
Scolytoplatypus, composition of the genus, p. 63, *S. pubescens* ♂, p. 64, HAGEDORN, Ins. Börse 1905.
S. hova, Madagascar, SCHAUFUSS, p. 12, t. c. ; *S. eichelbaumi*, E. Africa, HAGEDORN, p. 64, t. c. : n. spp.
Scolytus chikisanii, *curviventralis*, *equipunctatus*, Japan, NŪSIMA, J. Sapporo Agric. Coll. ii, n. spp. [not seen by Recorder, Cf. Munchen. Kol. Zeitschr. iii, p. 118] ; *S. productus*, Venezuela, HAGEDORN, p. 547, Bull. Mus. Paris x : n. sp.
Stephanoderes moschata, Guadeloupe, SCHAUFUSS, p. 8, Ins. Börse 1905, n. sp.
Tomicus mexicanus, p. 75, *bonanseai*, p. 76, Mexico, HOPKINS, P. ent. Soc. Washington vii, n. spp.
Tricolus n. g. p. 286, near *Pterocyclon ovicollis*, pl. ix, fig. 3, *nodifer*, fig. 4, p. 287, n. spp., Guatemala, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6.
Xyleborus meuseli, E. Siberia, REITTER, p. 249, Wien. ent. Zeit. xxiv ; *X. triton*, p. 18, *fraterculus*, p. 19, Madagascar, SCHAUFUSS, Ins. Börse 1905 ; *X. confus*, *camopinus*, Guiana, HAGEDORN, p. 549, Bull. Mus. Paris x : n. spp.

ANTHRIBIDÆ.

Catalogue of Anthribide, 217 genera, 1465 species, BOVIE, pp. 218-334, Ann. Soc. ent. Belgique 1905.

CERAMBYCIDÆ.

[Cf. CHOBOUT (310), DANIEL (387), DISTANT (421), FAIRMAIRE (534, 536), FALL (542), GOUNELLE (877, 879), HEATH (730, 731), HELLER (737), LAMEERE (910), MAYET (1016), MjöBERG (1049), MÜLLER (1079), PIC (1173, 1181, 1187, 1190), REITTER (1246, 1253), SCHAEFFER (1323, 1324), SHARP (1385), SHARP & SMITH (1385), SKINNER (1408), WANDOLLECK (1565), WEBB (1592), WEISE (1601), WICKHAM (1630), ZANG (1658).]

Longicornia, in Baltic amber, redetermination of Berendt's species; also n. spp. cf. Palæoent. p. 128.

The ♀ abdomen of numerous forms, WANDOLLECK, Zool. Jahrb. Anat. xii, pp. 477-576, pl. xxviii.

The Recorder has now seen parts 1 & 2 of Cah. v of Pic's *Materiaux etc.* and has contented himself with extracting what he believes to be intended as new species.

Acanthocinus linearis, Arizona, SKINNER, p. 290, Ent. News Philad. xvi, n. sp.

Agapanthia pustulifera, Jerusalem, PIC, p. 12, Mat. Long. Cah. v, 2; *A. subnuda*, Transcaspiian, REITTER, p. 93, Wien. ent. Zeit. xxiv: n. spp.

Anaglyptus luteofasciatus, Morea, PIC, p. 153, Echange xxi, n. sp.

Ancylistus transversus, Madagascar, FAIRMAIRE, p. 137, Ann. Soc. ent. Belgique 1905, n. sp.

Artelida calcarata, fuscosericans, Madagascar, FAIRMAIRE, p. 134, t. c. n. spp.

Aesenum striatum, larva, SHARP & SMITH, p. 162, pl. ix, fig. 6, Tr. ent. Soc. London 1905.

Astynoscelis n. g. near *Rhopaloscelis, longicornis* n. sp., Mantchuria, PIC, p. 8, Mat. Long. Cah. v, 1.

Brachypteroma holtzi, Taurus, PIC, p. 114, Echange xxi, n. sp.

Brachytatus notabilis, p. 136, *bipartitus*, p. 137, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique 1905, n. spp.

Callimus semicyaneus, Greece, PIC, p. 187, Echange 1905, n. sp.

Calocerambyx n. g. near *Tetrascema*, p. 66, *hauseri* n. sp., New Guinea, p. 67, HELLER, Deutsche ent. Zeitschr. 1905.

Cephalallus n. g. near *Criocephalus, oberthuri*, n. sp., Yunnan, SHARP, p. 148, Tr. ent. Soc. London 1905.

Cephalocrius n. g. for *Criocephalus syriacus* Reitter, SHARP, p. 149, t. c.

Ceresium rugulipenne, Madagascar, FAIRMAIRE, p. 135, Ann. Soc. ent. Belgique 1905; *C. vittidorsum*, Yunnan, PIC, p. 10, Mat. Long. Cah. v, 1: n. spp.

Chariesthes rufula, Madagascar, FAIRMAIRE, p. 138, Ann. Soc. ent. Belgique 1905, n. sp.

Clytanthus hircanus, Persia, PIC, p. 114, Echange xxi, n. sp.

Clytus arvicola var. n. *tridentata*, BLEUSE, p. 20, Bull. Soc. ent. France 1905.

C. circassicus, Circassia, PIC, p. 10, Mat. Long. Cah. v, 2, n. sp.

Corenia bruchi, Tucuman, GOUNELLE, p. 227, Bull. Soc. ent. France 1905, n. sp.

Criocephalina, new group, SHARP, p. 147, Tr. ent. Soc. London 1905.

Criocephalus, monograph, *C. pinetorum*, valid species, p. 155, ♀, p. 156, *C. ferus* var. n. *hispanicus*, p. 157, *C. obsoletus* Rand. = (*mexicanus* Th.),

C. ferus, larva, pl. ix, fig. 5, SHARP, t. c.

C. deceptor, W. Tibet, p. 151, *coreanus*, Korea, p. 153, *tibetanus*, Tibet, *exoticus*, Chin Hills, p. 159, SHARP, t. c. n. spp.

Demonax mongtensis, Yunnan, PIC, p. 12, Mat. Long. Cah. v, 1, n. sp.

Derolus argenteifer, Yunnan, PIC, p. 11, t. c. n. sp.

- Desmocerus piperi*, Washington, WEBB, p. 104, P. ent. Soc. Washington vii, n. sp.
- Dorcadion arenarium*, the races with numerous varr. n., MÜLLER, pp. 129-153, Wien. ent. Zeit. xxiv; *D. arenarium* var. n. *marnicanum*, FRACASSI, p. 112, Riv. Col. ital. iii; *D. biforme* var. n. *discomaculatum* PIC, p. 187, Echange 1905; *D. talyshense* var. n. *morgani*, PIC, p. 301, Bull. Mus. Paris 1905; *D. navasi* and allies, NAVÁS, pp. 272, 273, Bol. Soc. Aragon. iv; *D. culminicola holtsi* subsp. n., PIC, p. 115, Echange xxi.
- D. grandevittatum*, Turkey, *subjunctum*, Greece, p. 7, *maljushenkoi*, Caucasus, p. 8, PIC, Mat. Long. Cah. v, 1; *D. henrici*, Tokat, PIC, p. 156, Echange xxi; *D. semiargenteum*, Persia, PIC, p. 301, Bull. Mus. Paris 1905: n. spp.
- Elaphidion fuchsii*, California, WICKHAM, p. 170, Canad. Ent. 1905; *E. mimeticum*, *niveivestitum*, Texas, SCHAEFFER, p. 132, Bull. Brooklyn Inst. i: n. spp.
- Ergates faber*, larva and pupa, pl. i, figg. 8-10, p. 39, Mjöberg, Arkiv Zool. ii, No. 17.
- Eupogonius fulvovestitus*, Texas, SCHAEFFER, p. 134, Bull. Brooklyn Inst. i, n. sp.
- Euryptera huachuca*, Arizona, SCHAEFFER, p. 164, t. c. n. sp.
- Exocentrus polymitus*, Natal, DISTANT, p. 207, Ann. Nat. Hist. (7) xv, n. sp.
- Grammoptera ruficornis* ab. n. *holomelina*, POOL, p. 133, Ent. Rec. xvii; *G. holomelina*, a valid species, DONISTHORPE, p. 182, Ent. Rec. xvii.
- Holanguis guerryi*, Yunnan, PIC, p. 10, Mat. Long. Cah. v, 1, n. sp.
- Hoploderes*, revision, LAMEERE, pp. 361-367, Ann. Soc. ent. Belgique 1905.
- H. reticulatus*, p. 362, *lavipennis*, p. 363, *nitidior*, p. 364, *confectus*, p. 365, Madagascar, LAMEERE, t. c. n. spp.
- Hoplorana nigroscutata*, Madagascar, FAIRMAIRE, p. 137, Ann. Soc. ent. Belgique 1905, n. sp.
- Hypocephalus armatus*, habits, GOUNELLE, pp. 105-108, pl. vi, Ann. Soc. ent. France 1905.
- Icariotis politicolis*, Madagascar, FAIRMAIRE, p. 134, Ann. Soc. ent. Belgique 1905, n. sp.
- Ichnocnemis pallidus*, Lower California, SCHAEFFER, p. 132, Bull. Brooklyn Inst. i, n. sp.
- Leptostylus pini*, Arizona, SCHAEFFER, p. 165, t. c. n. sp.
- Leptura morgani*, Persia, PIC, p. 300, Bull. Mus. Paris 1905, n. sp.
- Lepturges yucca*, Arizona, p. 167, *celtis*, Texas, p. 168, SCHAEFFER, Bull. Brooklyn Inst. i, n. spp.
- Lepturgoides* n. g. near *Liopus*, *pini* n. sp., Arizona, SCHAEFFER, p. 166, t. c.
- Lucasianus levallanti*, characters, habits, habitat, MAYET, p. 277, Bull. Soc. ent. France 1905.
- Lypsimena tigrina*, Arizona, SKINNER, p. 291, Ent. News Philad. xvi, n. sp.
- Macroculus angulosus*, Madagascar, FAIRMAIRE, p. 133, Ann. Soc. ent. Belgique 1905, n. sp.
- Macrotoma villosicollis*, p. 132, *semirugosa*, p. 133, Madagascar, FAIRMAIRE, t. c. n. spp.
- Madecops inornatus*, Madagascar, FAIRMAIRE, p. 136, t. c. n. sp.
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- Megasemum* defined, *M. 4-costatum* ♂, SHARP, p. 147, Tr. ent. Soc. London 1905.
- Neoclytus peninsularis*, Lower California, SCHAEFFER, p. 133, Bull. Brooklyn Inst. i, n. sp.

- Obrium brunneum*, food-habits, ESTIOT, p. 142, Bull. Soc. ent. France 1905.
- O. japonicum*, Japan, PIC, Mat. Long. Cah. v, 1, n. sp.
- Oncideres quercus*, Arizona, SKINNER, p. 291, Ent. News. Philad. xvi, n. sp.
- Ozymirus cursor* var. n. *subvittatus*, REITTER, p. 206, Wien. ent. Zeit. xxiv; *O. cursor* var. n. *nigrinus*, REITTER, p. 250, t. c.
- Parmena balteus* and *unifusciata*, synonymy, VON HEYDEN, pp. 25-28, Wien. ent. Zeit. xxiv.
- Parosodes aurivillii*, Goyaz, GOUNELLE, p. 295, cut, Bull. Soc. ent. France 1905, n. sp.
- Phytocia*, revision of subg. *Pilemia*, with synonymy, DANIEL, pp. 55-64, Munchen. Kol. Zeitschr. iii; *P. modesta inapicalis* subsp. n., PIC, p. 107, Echange xxi.
- Pilemia wawerkana*, Akbès, REITTER, p. 240, Wien. ent. Zeit. xxiv, n. sp.
- Plagionotus bobelayei* var. n. *mouzafferi*, PIC, p. 114, Echange xxi.
- Plectrogaster jordani*, Gold Coast, HEATH, p. 76, fig. 3, Entomologist 1905, n. sp.
- Pogonocherus negundo*, Arizona, SCHAEFFER, p. 164, Bull. Brooklyn Mus. n. sp.
- Polyarthron minutum*, Persia, PIC, p. 300, Bull. Mus. Paris 1905, n. sp.
- Prionus laticollis*, number of eggs, LAURENT, p. 62, Ent. News Philad. xvi.
- P. arechanus*, Caucasus, FAIRMAIRE, p. 79, Bull. Soc. ent. France 1905; *P. heros*, Arizona, FALL, p. 274, Canad. Ent. 1905: n. spp.
- Prosopocera biplagiata*, Angola, HEATH, p. 75, fig. 3, Entomologist 1905; *P. rothschildi*, Angola, HEATH, p. 98, fig. 2, t. c.: n. spp.
- Payrassa texana*, Brownsville, SCHAEFFER, p. 160, Bull. Brooklyn Inst. i, n. sp.
- Purpuricenus dalmatinus* var. n. *apicalis*, PIC, p. 163, Echange xxi.
- P. robusticollis*, Persia, PIC, p. 9, Mat. Long. Cah. v, 2, n. sp.
- Rhagium bifusciatum*, larva, SHARP, p. 163, pl. ix, fig. 9, Tr. ent. Soc. London 1905.
- Rhopulophora angustata*, Texas, SCHAEFFER, p. 162, Bull. Brooklyn Inst. i, n. sp.
- Romaleum niveitectum*, Arizona, SCHAEFFER, p. 160, t. c. n. sp.
- Rosalia alpina*, variation in Sicily, FIORI, p. 7, Natural. Sicil. xviii; *R. alpina*, food-trees, GERMAIN, p. 188, Feuille Natural. xxv.
- Semanotus ruscicus algerica* subsp. n., PIC, Echange xxi.
- Soridus griseus*, Natal, DISTANT, p. 206, Ann. Nat. Hist. (7) xv, n. sp.
- Spondylus buprestoides*, natural history, pp. 37-44, cut, MjöBERG, Arkiv Zool. ii, No. 17.
- Stenopterius ater* var. n. *subhumeralis*, PIC, p. 156, Echange xxi.
- Stenocephenus beyeri*, Arizona, SCHAEFFER, p. 163, Bull. Brooklyn Inst. i, n. sp.
- Strangalia erinnye* DAN., PIC, p. 127, Echange xxi.
- Tambusa* n. g. *Acmoceridaria*, *marleyi* n. sp., Natal, DISTANT, p. 205, Ann. Nat. Hist. (7) xv.
- Tetroptopsis guldei*, Algeria, CHOBAUT, p. 157, Bull. Soc. ent. France 1905, n. sp.
- Tetropium gabrieli*, Centr. Europe, WEISE, p. 136, Deutsche ent. Zeitschr. 1905, n. sp.; *T. gabrieli* noticed, SHARP, Ent. Mag. 1905, pp. 273, 274; *T. cruschayi*, p. 271, *parcum*, p. 272, England, SHARP, Ent. Mag. 1905, n. spp.
- Thaumasus gigus*, habits, RODRIGUEZ, p. 185, Bull. Soc. ent. France 1905.
- Tragocephala luctifera*, Madagascar, FAIRMAIRE, p. 135, Ann. Soc. ent. Belgique 1905, n. sp.
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- Xylotrechus quadrupes*, natural history, Tonkin, BOUTAN, C.R. Ac. Sci. cxl, p. 1654.
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Zographus lanci, Angola, HEATH, p. 74, fig. 1, Entomologist 1906, n. sp.

BRUCHIDÆ.

[Cf. PIC (1187), SCHILSKY (1331).]

- SCHILSKY, in Heft. 41, Käf. Eur. tabulates 100 spp. palæarctic *Bruchidæ*.
Acanthodides n. g. for *Bruchus mimosa* etc., SCHILSKY, Käf. Eur. 41c.
Bruchidius n. g., 41b, for a large part of *Bruchus angustifrons*, Egypt, 52, ganglbaueri, Centr. and S. Eur., 78, *sahlbergi*, Egypt, 94, n. spp., SCHILSKY, t. c.
Bruchus not *Laria* to be used; value of Geoffroy's name; the question of opportunism, GANGLBAUER, Munchen. Kol. Zeitschr. iii; *B. n. sp.* from gall on Duvana, Chile, KIEFFER & PABLO, Zeitschr. Insbiol. i, p. 66.
Kytorhinus reitteri, Mongolia, SCHILSKY, Käf. Eur. 41, p. 21, n. sp.
Laria beaupreti, Egypt, PIC, p. 122, Echange xxi, n. sp.
Mylabris, *Bruchus* and *Laria*, nomenclatorial, SCHILSKY, Käf. Eur. Heft. 41A-C.

CHRYSOMELIDÆ [except *Hispides* and *Cassidides*].

- [Cf. BRIGGS (191), CLAVAREAU (322), JACOBY (810, 811), JACOBY & CLAVAREAU (812, 813), KNAB (870), McCracken (1019), PIC (1171, 1184, 1187, 1189, 1191), REITTER (1246, 1254), SCHAEFFER (1323, 1324), WEISE (1596-1598, 1606, 1612).]
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Antonaria n. g. type *Pæcilomorpha murina* Westw., JACOBY & CLAVAREAU, p. 8, Gen. Ins. fasc. xxxiii.
A. femorata, Congo, CLAVAREAU, p. 111, Ann. Soc. ent. Belgique 1905, n. sp.
Apteropeda orbiculata, food-plant, NEWBERY, p. 210, Ent. Mag. 1905.
Ascecta lata, Cameroons, WEISE, p. 80, Deutsche ent. Zeitschr. 1906;
A. sobrina, Rhodesia, WEISE, p. 330, t. c. : n. spp.
Atelectura schultzei, Yola, WEISE, p. 77, t. c. n. sp.
Aulacophora scutellata Baly, to *Prosmidia*, WEISE, p. 45, t. c.
Bacteriaspis n. g.? for *Aulacophora scutellata* Baly, WEISE, p. 328, t. c.
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Blepharida rudeli, E. Africa, WEISE, p. 41, Deutsche ent. Zeitschr. 1905, n. sp.
Bradylema robusta = (*pallida*, *rufoadumbrata* and *constricticollis* Clark, and *transvaalensis* Jac.), WEISE, p. 322, t. c.
Cerophysa siamensis, Malay States, JACOBY, p. v, Fascic. Malay. App. ii, n. sp.
Chlamys plicata, natural history, cases, BRIGGS, Cold Spring Mon. iv, 12 pp., 1 pl.
Chrysomela sanguineocincta, Sinai, Crotch 1871, n. sp. but not yet recorded, SHARP, p. 520, Ann. Nat. Hist. (7), xv.
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- Colaspoides annandalei*, p. iii, *siamensis*, p. iv, Malay States, JACOBY, Fasc. Malay. App. ii, n. spp.
- Colasposoma ertli*, p. 37, *posticum*, *geniculatum*, p. 39, *concinnum*, p. 40, Trop. Africa, WEISE, Deutsche ent. Zeitschr. 1905, n. spp.
- Coptocephala aeneopicta* var. n. *bistrijuncta*, PIC, p. 156, Echange xxi; *C. gebleri* var. n. *inundata*, REITTER, p. 251, Wien. ent. Zeit. xxiv.
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DIPLOPTERA (VESPIDÆ, EUMENIDÆ, MASARIDÆ).

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HYMENOPTERA FOSSORIA (or SPHEGOIDEA).

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- Chiodes oculatus*, Manila, ASHMEAD, p. 966, P. U. S. Mus. xxviii, n. sp.
- Chirotica balteata*, Cape Colony, CAMERON, p. 232, Zeitschr. Hym. Dipt. v, n. sp.
- Chromocryptus albomaculatus*, Manila, ASHMEAD, p. 115, P. U. S. Mus. xxix, n. sp.
- Cidaphurus nigrolineatus*, Nevada, CAMERON, p. 129, Invert. Pacif. i, n. sp.
- Clatha* n. g. near *Agrypon*, p. 129, *longipes* n. sp., Ceylon, p. 130, CAMERON, Spolia Zeylan. iii.
- Clitiga* n. g. *Cryptine*, p. 117, *arcuata*, *forticornis*, f. 7, n. spp., Ceylon, pl. B, f. 6, p. 118, CAMERON, t. c.
- Calichneumon bilineatus*, p. 244, *C. albopilosellus*, p. 245, N. India, CAMERON, Zeitschr. Hym. Dipt. v, n. spp.
- Cænostoma* n. g. *Xoridini*, p. 171, *filicornis* n. sp., Borneo, p. 172, CAMERON, Entomologist 1905.
- Cæcula* n. g. *Mesostenini*, p. 145, *fulcipes* n. sp., Borneo, p. 146, CAMERON, J. Straits Asiat. Soc. xlv.
- Couloneuri* n. g. near *Eremotylus*, *melanostigma*, *longicornis* n. spp., New Guinea, SZÉPLIGETI, p. 35, Gen. ins. fasc. xxxiv.
- Colpanta caricornis*, p. 150, *annulicornis*, p. 151, Borneo, CAMERON, J. Straits Asiat. Soc. xlv, n. spp.
- Cœminogoppa orbitalis*, Simla, CAMERON, p. 80, Zeitschr. Hym. Dipt. v, n. sp.
- Critichneumon rufo-femoratus*, Sikkim, CAMERON, p. 143, t. c.; *C. erythronus*, CAMERON, p. 105, Entomologist 1905; *C. manile*, Philippines, ASHMEAD, p. 113, P. U. S. Mus. xxix: n. spp.
- Crotocryptus* n. g. near *Stentia*, p. 141, *maculiceps* n. sp., Borneo, p. 142, CAMERON, J. Straits Asiat. Soc. xlv.

- Erythrojoppa nigromaculata*, Sikkim, CAMERON, p. 78, Zeitschr. Hym. Dipt. v, n. sp.
- Erythrotheronia* n. g. *Pimplinae*, *flavolineata* n. sp., Ceylon, pl. B, fig. 12, CAMERON, p. 134, Spolia Zeylan. iii.
- Ethromorpha ornatipes*, pl. B, fig. 8, CAMERON, p. 135, t. c.
- Eucremastus* n. g. p. 50, *brevicornis* n. sp., Spain, p. 51, SZÉPLIGETI, Gen. ins. fasc. xxxiv.
- Facydes striolata*, Borneo, CAMERON, p. 156, J. Straits Asiat. Soc. xlv, n. sp.
- Fenenias erythropus*, Ceylon, pl. A, fig. 14, p. 112, CAMERON, Spolia Zeylan. iii, n. sp.
- Friona rufipes*, p. 110, pl. B, fig. 1, *bituberculata*, p. 111, Ceylon, CAMERON, t. c.; *F. ruficoxis*, *pluralis*, Borneo, CAMERON, p. 133, J. Straits Asiat. Soc. xlv : n. spp.
- Glypta xanthogastra*, Nevada, CAMERON, p. 128, Invert. pacif. i, n. sp.
- Grotea anguina* as bee-parasite, GRAENICHER, pp. 43-46, Ent. News Philad. xvi.
- Guriya tibialis*, Simla, CAMERON, p. 245, Zeitschr. Hym. Dipt. v, n. sp.
- Hubrocryptus graenicheri* as bee-parasite, GRAENICHER, p. 46, Ent. News Philad. xvi.
- Hadromanus* n. g. for *lavicoxis* Schmied., SZÉPLIGETI, p. 14, Gen. ins. fasc. xxxiv.
- Haliphera fulvipes*, Ceylon, CAMERON, p. 101, Spolia Zeylan. iii, n. sp.
- Halpurnia ornatipes*, Sikkim, CAMERON, p. 87, Zeitschr. Hym. Dipt. v, n. sp.
- Hellwigia intermedia*, Croatia, SZÉPLIGETI, p. 518, Ann. Mus. Hungar. iii, n. sp.
- Hellwigella* n. g. *Ophioninae*, *nigripennis*, *similis* n. spp., Tunia, SZÉPLIGETI, Gen. ins. fasc. xxxiv.
- Hemiteles gracilis*, DEL GUERIO, p. 296, cuts, Redia ii.
- H. brunneus*, p. 815, *nigrobasis*, p. 819, *rufisonatus*, p. 824, *carbonarius*, p. 829, *hilarellus*, p. 844, *hellbachi*, p. 851, *magnificus*, p. 861, *insignipennis*, p. 865, *bituberculatus*, p. 867, *flavicornis*, p. 868, *dimidiatipennis*, p. 870, Thuringia, SCHMIEDEKNECHT, Opusc. ent. ii, n. spp.
- Henicospilus variegatus*, Turkestan, SZÉPLIGETI, p. 519, Ann. Mus. Hungar. iii, n. sp.
- Homoporus niger*, p. 422, *reflexus*, p. 423, England, MORLEY, Tr. ent. Soc. London 1905, n. spp.
- Hoplismenus ceylonicus*, Kandy, CAMERON, p. 100, Spolia Zeylan. iii; *H. ? leptocerus*, Mexico, CAMERON, p. 251, Tr. Amer. ent. Soc. xxx : n. spp.
- Ichneumon leppani*, p. 226, *schonlandi*, *I. ? peringueyi*, p. 227, *lissoaspus*, p. 228, S. Africa, CAMERON, Rec. Albany Mus. i; *Ich. ? johannis*, Cape Colony, CAMERON, p. 245, t. c.; *I. ? pilostomus*, Java, CAMERON, p. 33, Tijdschr. Ent. xlviii : n. spp.
- Idiostoma* n. g. *Cryptini*, p. 339, *flavipennis* n. sp., Cape G. H., p. 340, CAMERON, Zeitschr. Hym. Dipt. v.
- Isotima albicincta*, p. 407, *metathoracica*, *albifrons*, p. 408, *cincticornis*, p. 409, Manila, ASHMEAD, P. U. S. Mus. xxix, n. spp.
- Kriegeria* n. g. *Xoridini*, *heptazonata* n. sp., Mindanao, ASHMEAD, p. 116, t. c.
- Laelolus plagiatus*, p. 134, *reticulatus*, *basimacula*, p. 135, *maculiscutis*, p. 136, Borneo, CAMERON, J. Straits Asiat. Soc. xlv, n. spp.
- Lagenestra riolaceipennis*, Sikkim, CAMERON, p. 86, Zeitschr. Hym. Dipt. v, n. sp.
- Lampronota langei*, *suerinensis*, Germany, BRAUNS, p. 133, Zeitschr. Hym. Dipt. v; *L. aciculata*, Colorado, CAMERON, p. 129, Invert. pacif. i : n. spp.

- Lareiga alboannulata*, p. 246, *flavomaculata*, p. 247, Simla, CAMERON, Zeitschr. Hym. Dipt. v, n. sp.
- Leptocryptus montanus, lacustris*, p. 732, Thuringia, SCHMIEDEKNECHT, Opusc. ent. ii, n. spp.
- Leptothecus flavomaculatus*, Sikkim, CAMERON, p. 142, Zeitschr. Hym. Dipt. v, n. sp.
- Lienella* n. g. *Hemitelint*, p. 246, *nigriceps* n. sp., Cape Colony, p. 247, CAMERON, Rec. Albany Mus. i.
- Lissonota peringueyi*, p. 238, *spilostoma*, p. 239, S. Africa, CAMERON, t. c.; *L. interstitialis*, Cape Colony, CAMERON, p. 261, t. c.; *L. greeni*, Ceylon, CAMERON, p. 142, Spolia Zeylan. iii : n. spp.
- Lissopimpla rufipes*, Ceylon, CAMERON, p. 140, t. c. n. sp.
- Lissotheronia* n. g. *Pimplina flavipes* n. sp., Ceylon, CAMERON, p. 139, t. c.
- Listrocryptus* n. g. p. 134, *spatulatus* n. sp., Centr. Europe, p. 135, BRAUNS, Zeitschr. Hym. Dipt. v.
- Listrognathus mengerseni*, Thuringia, p. 565, SCHMIEDEKNECHT, Opusc. ent. ii, n. sp.
- Limnerium iratum*, Grahamstown, CAMERON, p. 309, Rec. Albany Mus. i; *L. garrulum*, Cape Colony, CAMERON, p. 315, t. c.; *L. smilaensis*, N. India, CAMERON, p. 283, Zeitschr. Hym. Dipt. v; *L. taprobanicum*, Ceylon, CAMERON, p. 128, Spolia Zeylan. iii; *L. longicauda, leptogaster*, p. 256, *mexicanum, astecum, centrale*, p. 257, Mexico, CAMERON, Tr. Amer. ent. Soc. xxx : n. spp.
- Loiada* n. g. *Mesostenini*, p. 166, *maculiceps*, Borneo, n. sp. p. 167, CAMERON, Ann. Nat. Hist. (7) xvi.
- Macrophatnus* n. g. *Heresiarchini, rufipes* n. sp., S. Africa, CAMERON, pp. 232, 306, Rec. Albany Mus. i.
- Macrophion* n. g. *Ophonina*, p. 32, *fenestratus*, Brazil, *ornatus*, Costa Rica, n. spp. p. 33, SZÉPLIGETI, Gen. ins. fasc. xxxiv.
- Matura* = (*Cressonianus* Ashm.) belongs to *Listrodromini*, BRÈTHES, p. 335, An. Mus. Buenos Aires (3) iv.
- Megarhyssa areolata*, Hungary, p. 1, *variegata*, Perak, p. 2, MOCSÁRY, Ann. Mus. Hungar. iii, n. spp.
- Melanichneumon kandyensis*, Ceylon, CAMERON, p. 99, Spolia Zeylan. iii; *M. ? javanicus*, Java, CAMERON, p. 34, Tijdschr. Ent. xlviii : n. spp.
- Melichna cinctipes, annulipes*, p. 107, *varibalteata*, p. 108, *erythropus*, p. 109, pl. B, fig. 2, *maculiceps*, p. 110, Ceylon, CAMERON, Spolia Zeylan. iii; *M. hyalinis, reticulata*, p. 148, *albomaculata*, p. 149, Borneo, CAMERON, J. Straits Asiat. Soc. xlv : n. spp.
- Mesostenoides fulvipes*, Mexico, CAMERON, p. 253, Tr. Amer. ent. Soc. xxx : *M. bakerianus*, Nicaragua, CAMERON, p. 102, Invert. pacif. i : n. spp.
- Mesostenus truncatidens*, Europe, p. 570, *peregrinus*, Thuringia, p. 572, *hellenicus*, Olympia, p. 575, SCHMIEDEKNECHT, Opusc. ent. ii; *M. leptonotus*, S. Africa, CAMERON, p. 234, Rec. Albany Mus. i; *M. basimacula*, p. 249, *mimeticus*, p. 250, Cape Colony, CAMERON, t. c.; *M. multimaculatus*, p. 139, *maculiscutis*, p. 140, Borneo, CAMERON, J. Straits Asiat. Soc. xlv; *M. leucosonatus*, Manila, ASHMEAD, p. 967, P. U. S. Mus. xxviii; *M. rufus*, Mexico, CAMERON, p. 252, Tr. Amer. ent. Soc. xxx; *M. ihering*, p. 129, *casununga*, p. 130, Brazil, BRAUNS, Zeitschr. Hym. Dipt. v : n. spp.
- Metophion* n. g. *Ophonina*, *bicolor, variegatus* n. spp., New Guinea, SZÉPLIGETI, Gen. ins. fasc. xxxiv.
- Metopius rufus*, N. India, CAMERON, p. 281, Zeitschr. Hym. Dipt. v; *M. browni*, Manila, ASHMEAD, p. 117, P. U. S. Mus. xxix : n. spp.
- Microcryptus funereus*, Carinthia, p. 630, *exquisitus*, p. 632, *brevisulatus*, p. 639, *periculatus*, p. 641, *secernendus*, p. 647, *discedens*, p. 648, *unifasciatus*, p. 653, Thuringia, SCHMIEDEKNECHT, Opusc. ent. ii, n. spp.

- Myermo himalayensis*, p. 248, *iridipennis*, p. 278, *femorata*, p. 279, *robusta*, p. 280, *annulipes*, p. 281, N. India, CAMERON, p. 281, Zeitschr. Hym. Dipt. v, n. sp.
- Neleothymus*? *rufo-ornatus*, Nicaragua, CAMERON, p. 103, Invert. pacif. i, n. sp.
- Neotheronia*, KRIEGER, p. 286, recharacterises the genus and tabulates the species, the following being new; *aurata*, *micans*, *enderleini*, p. 289, *mandibularis*, *pilosa*, p. 290, *carinata*, *impressa*, *roraria*, p. 291, *veles*, *cristata*, *fossulata*, *subparallela*, p. 292, *kohli*, *parallela*, *angulata*, p. 293, *buccata*, *excisa*, *occipitalis*, p. 294, *terebatris*, S. America, *hastata*, Panama, *surinamensis*, *costata*, p. 295, *sarisophora*, *radialis*, *vallata*, p. 296, *obesa*, *tricolor*, p. 297, *amphimelena*, *tuberculata*, *mesoxantha*, p. 298, *austera*, p. 299, *kriechbaumeri*, *columbiensis*, p. 301, *marginata*, *submarginata*, p. 303, *fumosa*, p. 304, *aurulenta*, South America, *septentrionalis*, N. Carolina, p. 305, *australis*, *facialis*, p. 306, *oxyodus*, p. 307, *tenuis*, p. 333, *laticeps*, *coequata*, p. 334, *compta*, p. 337, *transversaria*, p. 338, S. America, KRIEGER, Zeitschr. Hym. Dipt. v, n. spp.
- Nesomesochorus* n. g. and subfam. n., p. 967, *oculatus* n. sp., Manila, p. 968, ASHMEAD, P. U. S. Mus. xxviii.
- Nothanomalon* n. g. *Campoplegina*, *novoguineensis* n. sp., New Guinea, SZÉPLIGETI, p. 39, Gen. ins. fasc. xxxiv.
- Nototrachus flavomaculatus*, Cape Colony, CAMERON, p. 250, Rec. Albany Mus. i; *N. reticulatus*, Ceylon, CAMERON, p. 128, Spolia Zeylan. iii : n. spp.
- Ophiomorpha* n. g. p. 34, *concolor*, Trop. Africa, *bicolor*, Brazil, n. spp., p. 35, SZÉPLIGETI, Gen. ins. fasc. xxxiv.
- Ophion sibiricus*, p. 520, *albistylus*, Siberia, *turcomanicus*, Transcaspiian, p. 521, SZÉPLIGETI, Ann. Mus. Hungar. iii; *O. bicarinatus*, Ceylon, CAMERON, p. 120, Spolia Zeylan. iii : n. spp.
- Ophionidae*, the genera with lists of species, and 2 subfam. n. *Pharsaliina*, *Xiphosomina*, SZEPLIGETI, Gen. ins. fasc. xxxiv.
- Orona* n. g. *Portonini*, *petiolaris* n. sp., California, CAMERON, p. 131, Invert. pacif. i.
- Oxytenia rufolineata*, Mexico, CAMERON, p. 254, Tr. Amer. ent. Soc. xxx, n. sp.
- Paipila* n. g. aberrant, p. 258, *longipes* n. sp., Mexico, p. 259, CAMERON, t. c.
- Paniscus elegans*, Tunis, SZÉPLIGETI, p. 540, Ann. Mus. Hungar. iii; *P. intermedius*, p. 125, *orientalis*, p. 126, *lævis*, p. 127, Ceylon, CAMERON, Spolia Zeylan. iii : n. spp.
- Paurophatnus* n. g. *Hemiteini annulipes* n. sp., S. Africa, CAMERON, p. 342, Zeitschr. Hym. Dipt. v.
- Pezomachus silvestrii*, Portici, ASHMEAD, p. 142, Canad. Ent. 1905, n. sp.
- Phalega* n. g. *Acanitini*, *lutea* n. sp., Borneo, CAMERON, p. 170, Entomologist 1905.
- Phalga* n. g. near *Arotes*, p. 130, *lutea* n. sp., Borneo, p. 131, CAMERON, J. Straits Asiat. Soc. xlv.
- Pharzites* n. g. near *Lactolus*, p. 137, *nigritarsis* n. sp., Borneo, p. 138, CAMERON, t. c.
- Philopsyche* n. g. *Pimplina*, p. 137, *albobalteuta* n. sp., Ceylon, pl. B, fig. 10, p. 138, CAMERON, Spolia Zeylan. iii.
- Phobetes bruchii*, La Plata, BRÉTHES, p. 21, An. Mus. Buenos Aires (3) iv, n. sp.
- Phthorimus anomalus*, England, MORLEY, p. 420, Tr. ent. Soc. London 1905, n. sp.
- Phygadeuon serotinus*, p. 691, *nubilipennis*, p. 696, *autumnalis*, p. 699, *rufovarius*, p. 700, *bischoffi*, p. 701, *alteareolatus*, p. 704, Thuringia,

- tergestinus*, Triest, p. 707, *lehmanni*, p. 708, *nobilitatus*, p. 716, *connectens*, p. 721, Thuringia, SCHMIEDEKNECHT, Opusc. ent. ii, n. spp.
- Pimpla heliophila*, Transvaal, CAMERON, p. 343, Zeitschr. Hym. Dipt. v : *P. albipalpis*, p. 237, *brunneiventris*, p. 238, Grahamstown, CAMERON, Rec. Albany Mus. i ; *P. æsticola*, p. 19, *holmbergi*, p. 20, La Plata, BRÉTHES, An. Mus. Buenos Aires (3) iv : n. spp.
- Plectocryptus mephisto*, Germany, p. 597, *antennalis*, p. 598, *hilarulus*, p. 599, Thuringia, SCHMIEDEKNECHT, Opusc. ent. ii, n. spp.
- Pleuroneurophion erythrocerus*, Ceylon, CAMERON, p. 121, Spolia Zeylan. iii, n. sp. ; *P. malayanus*, p. 122, Borneo, *grandis*, Himalaya, p. 123, CAMERON, J. Straits Asiat. Soc. xliv, n. spp.
- Porizon vierecki*, characters, COCKERELL, p. 362, Canad. Ent. 1905.
- Pristocelus* n. g. near *Pristomerus*, *atriceps* n. sp., New Guinea, SZÉPLIGETI, p. 48, Gen. ins. fasc. xxxiv.
- Pristomeridia* ? *microdonta*, Nicaragua, CAMERON, p. 46, Invert. pacif. i, n. sp.
- Promethus dodsi*, England, MORLEY, p. 421, Tr. ent. Soc. London 1906, n. sp.
- Pseudamblyteles* ? *erythropus*, S. Africa, CAMERON, p. 230, Rec. Albany Mus. i, n. sp.
- Pseudanomalon* n. g. p. 33, *gracilis* n. sp., New Guinea, p. 34, SZÉPLIGETI, Gen. ins. fasc. xxxiv.
- Pseudocremastus* n. g. near *Cremastus*, *radialis* n. sp., Hungary, SZÉPLIGETI, p. 50, t. c.
- Pyramirhyssa* n. g. near *Rhyssa*, *magnifica* n. sp., Brazil, MOCSÁRY, p. 15, Ann. Mus. Hungar. iii.
- Rhorus spinipes*, Ceylon, CAMERON, p. 132, Spolia Zeylan. iii, n. sp.
- Rhynchocryptus* n. g. p. 338, *violaceipennis*, p. 339, n. sp., Cape G. H., CAMERON, Zeitschr. Hym. Dipt. v.
- Rhyssa hungarica*, Budapest, p. 5, *mesopyrrha*, Java, p. 6, MOCSÁRY, Ann. Mus. Hungar. iii, n. spp.
- Scopesis flavolineatus*, Mexico, CAMERON, p. 254, Tr. Amer. ent. Soc. xxx, n. sp.
- Sileila apicimaculata*, Borneo, CAMERON, p. 131, J. Straits Asiat. Soc. xliv, n. sp.
- Siphimedia iridicolor*, Kuching, CAMERON, p. 130, t. c. n. sp.
- Skeatia acutilineata*, pl. A, fig. 12, p. 113, *cyclosia*, p. 114, *panthona*, p. 115, Ceylon, CAMERON, Spolia Zeylan. iii ; *S. balteata*, Singapore, CAMERON, p. 143, J. Straits Asiat. Soc. xlv ; *S. juvenica*, Java, CAMERON, p. 35, Tijdschr. Ent. xlviii : n. spp.
- Spanophatnus* n. g. near *Platylabris*, p. 230, *ruficeps* n. sp., Grahamstown, p. 231, CAMERON, Rec. Albany Mus. i.
- Spilichneumon darjeelingensis*, Sikkim, CAMERON, p. 87, Zeitschr. Hym. Dipt. v ; *S. annulicornis*, p. 85, *cozalis*, p. 105, Simla, CAMERON, Entomologist 1905 : n. spp.
- Spilophion* n. g. *Ophionina*, p. 124, *maculipennis* n. sp., Ceylon, pl. B, fig. 13, p. 125, CAMERON, Spolia Zeylan. iii.
- Spiloxorides erythrocephalus*, Borneo, CAMERON, p. 166, Ann. Nat. Hist. (7) xvi ; *S. erythrocephalus*, Borneo, CAMERON, p. 126, J. Straits Asiat. Soc. xlv : n. sp.
- Stenichneumon* ? *æthiopicus*, S. Africa, CAMERON, p. 229, Rec. Albany Mus. i, n. sp.
- Stenophthalmus* n. g. *Ophionina*, p. 23, *algericus*, Algeria, *sibiricus*, Siberia, n. spp., p. 24, SZÉPLIGETI, Gen. ins. fasc. xxxiv.
- Stiboscopus thuringiacus*, Germany, p. 606, SCHMIEDEKNECHT, Opusc. ent. ii, n. sp.
- Stictichneumon* n. g. *Ichneumonina*, p. 105, *mucariæ* n. sp., Ceylon, p. 106, CAMERON, Spolia Zeylan. iii.

- Stilbops limneriaformis* ♂, PFANKUCH, p. 141, Abh. Ver. Bremen xviii.
Boreojomalus bicinctus, Manila, ASHMEAD, p. 115, P. U. S. Mus. xxix, n. sp.
Stylocryptus tyrolensis, Innsbruck, p. 662, *coralis*, Thuringia, p. 663, SCHMIEDERNECHT, Opusc. ent. ii, n. spp.
Buolitia spinifrons, Sikkim, CAMERON, p. 143, Zeitschr. Hym. Dipt. v, n. sp.
Tunera n. g. *Pimplinae*, *anaulipes* n. sp., Ceylon, CAMERON, p. 141, Spolia Zeylan. iii.
Tanyphatnus n. g. *Ichneumoninae*, p. 104, *multimaculatus* n. sp., Ceylon, p. 105, CAMERON, t. c.
Temelucha rugosa, Budapest, SZÉPLIGETI, p. 582, Ann. Mus. Hungar. iii, n. sp.
Theronia maskeliya, Ceylon, CAMERON, p. 133, Spolia Zeylan. iii, n. sp.
Trichionotus n. g. *Ophionini*, *reticulatus* n. sp., Borneo, CAMERON, p. 168, Ann. Nat. Hist. (7) xvi.
Trichomma nigricans, Ceylon, CAMERON, p. 131, Spolia Zeylan. iii, n. sp.
Trichonotus n. g. *Ophioninae*, *reticulatus* n. sp., Borneo, CAMERON, p. 124, J. Straits Asiat. Soc. xlv.
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Vagenatha armata, Borneo, CAMERON, p. 144, J. Straits Asiat. Soc. xlv, n. sp.
Xanthopimpla taprobanica, p. 135, *kandyensis*, *parva*, p. 136, *minuta*, p. 137, Ceylon, CAMERON, Spolia Zeylan. iii; *X. kuchingensis*, *clavipennis*, Sarawak, CAMERON, p. 119, J. Straits Asiat. Soc. xlv; *X. maculiceps*, Java, CAMERON, p. 37, Tijdschr. Ent. xlviii; *X. kriegeri*, Manila, ASHMEAD, p. 411, P. U. S. Mus. xxix : n. spp.
Xiphosomella n. g. *brasilensis* n. sp., Coary, SZÉPLIGETI, p. 4, Gen. ins. fasc. xxxiv.
Zonoecryptus fumipennis, Grahamstown, CAMERON, p. 307, Rec. Albany Mus. i, n. sp.

BRACONIDÆ (incl. ALYSIIDÆ).

[Cf. ASHMEAD (31-34), BRËTHES (188), CAMERON (240, 242, 249, 250, 251, 254, 261, 263, 265, 267, 269, 270, 272), ENDERLEIN (498, 499, 510), KIEFFER (842), NORDENSTRÖM (1109), SZÉPLIGETI (1466, 1468, 1469).]

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- Actisis pleuralis*, Manila, ASHMEAD, p. 6, Canad. Ent. 1905, n. sp.
Ayathiella tricolor, *ruficeps*, p. 52, *minor*, p. 53, Sydney, SZÉPLIGETI, Ann. Mus. Hungar. iii, n. spp.
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Atanyridus tomentosus, Queensland, SZÉPLIGETI, p. 25, t. c. n. sp.
Atorvulus brevicaudis, Sydney, SZÉPLIGETI, t. c. n. sp.
Batrachus n. g. p. 227, *dohrniana* n. sp., Sumatra, p. 228, and incl. 3 spp. *Spinaria*, ENDERLEIN, Stettin Ent. Zeit. lvi.

- Beognatha incompleta*, Singapore, SZÉPLIGETI, Ann. Mus. Hungar. iii, n. sp.
- Biocteres longicaudatus*, Manila, ASHMEAD, p. 970, P. U. S. Mus. xxviii.
- Blacus pulcher*, Singapore, SZÉPLIGETI, p. 53, Ann. Mus. Hungar. iii, n. sp.
- Bracon daphnephila, cecidobius*, Bengal, KIEFFER, p. 185, Ann. Soc. Bruxelles xxix; *B. singaporensis*, Singapore, p. 37, *australiensis, bimaculatus*, p. 38, Australia, *transiens*, New Guinea, p. 39, SZÉPLIGETI, Ann. Mus. Hungar. iii; *B. vau*, Manila, ASHMEAD, p. 971, P. U. S. Mus. xxviii; *B. algeri*, Manila, ASHMEAD, p. 119, op. cit. xxix; *B. managua, chinandegaensis*, p. 46, *nicaraguaensis, bakeri*, p. 47, Nicaragua, *caroli, longicaudis*, p. 48, Guatemala, CAMERON, Invert. pacif. i : n. spp.
- Braunnia antennalis*, Sierra Leone, SZÉPLIGETI, p. 52, Ann. Mus. Hungar. iii; *B. similis*, Cameroons, SZÉPLIGETI, p. 11, Arkiv Zool. ii, No. 14 : n. spp.
- Brownius* n. g. *Eurobraconini*, p. 7, *armatus* n. sp., Manila, p. 8, including also pt. of *Spinaria*, ASHMEAD, Canad. Ent. 1905.
- Cardiochiles philippensis*, Manila, ASHMEAD, p. 118, P. U. S. Mus. xxix, n. sp.
- Cendebeus* n. g. *Exothecini*, p. 105, *flicornis* n. sp., Sarawak, p. 106, CAMERON, J. Straits Asiat. Soc. xlv.
- Cenostomus trichosomus*, Mexico, CAMERON, p. 387, Tr. Amer. ent. Soc. xxxi, n. sp.
- Chaolia ruficeps*, p. 101, *lutea*, p. 202, Borneo, CAMERON, J. Straits Asiat. Soc. xlv; *C. tuberculata*, p. 40, *crassicauda*, p. 41, Borneo, CAMERON, Tijdschr. Ent. xlviii; *C. trituberculata*, p. 49, *sulcata, maculifrons*, p. 50, Sarawak, CAMERON, J. Straits Asiat. Soc. xlii : n. spp.
- Chelonus tricoloratus*, Trincomalee, CAMERON, p. 79, Spolia Zeylan. iii; *C. albicinctus*, Manila, ASHMEAD, p. 968, P. U. S. Mus. xxviii; *C. similis*, p. 44, *unimaculatus, coriaceus*, p. 45, *australiensis*, p. 46, N. S. Wales, SZÉPLIGETI, Ann. Mus. Hungar. iii; *C. clavinervis*, Mexico, CAMERON, p. 261, Tr. Amer. ent. Soc. xxx; *C. immaculatus, centralis*, Nicaragua, CAMERON, p. 49, Invert. pacif. i : n. spp.
- Cratospila longicornis*, Singapore, SZÉPLIGETI, p. 55, Ann. Mus. Hungar. iii, n. sp.
- Cremnops pulchripennis*, Cameroons, SZÉPLIGETI, p. 10, Arkiv Zool. ii, No. 14; *C. bispinosa*, Singapore, *africana*, Cameroons, SZÉPLIGETI, Ann. Mus. Hungar. iii : n. spp.
- Diospilus ruficeps*, N. S. Wales, SZÉPLIGETI, t. c. n. sp.
- Disophrys ornatipennis*, p. 112, *niger*, p. 113, *fumipennis*, p. 114, Borneo, CAMERON, J. Straits Asiat. Soc. xlv, n. spp.
- Edyia* n. g. near *Euscelinus*, p. 159, *annulicornis* n. sp., Borneo, p. 160, CAMERON, Ann. Nat. Hist. (7) xvi; *Edyia* n. g. p. 108, *annulicornis* n. sp., Sarawak, p. 109, CAMERON, J. Straits Asiat. Soc. xlv.
- Enagathis erythrocephala*, p. 110, *creophora*, p. 111, Borneo, CAMERON, t. c. n. spp.
- Ernestiella* n. g. *Cardiochilinae, nigromaculata* n. sp., Ceylon, CAMERON, p. 81, Spolia Zeylan. iii.
- Euagetis albotarsus*, Cameroons, SZÉPLIGETI, p. 10, Arkiv Zool. ii, No. 14, n. sp.
- Euphoriella testaceipes*, Mexico, CAMERON, p. 261, Tr. Amer. ent. Soc. xxx, n. sp.
- Fornicia annulipes*, Manila, ASHMEAD, p. 7, Canad. Ent. 1905, n. sp.
- Forsteria ? ruficollis*, Nicaragua, CAMERON, p. 48, Invert. pacif. i, n. sp.
- Gastrotheca capra*, Mombasa, p. 234, *capensis*, S. Africa, p. 235, *sumatrana*, Sumatra, p. 236, ENDERLEIN, Stettin Ent. Zeit. lxvi, n. spp.
- Goniarcha malayensis*, Manila, ASHMEAD, p. 411, P. U. S. Mus. xxix, n. sp.

- Habnoba* n. g. *Spathiina*, *petiolata* n. sp., Sarawak, CAMERON, p. 108, J. Straits Asiat. Soc. xlv.
- Hecabolus rubrocinctus*, Manila, ASHMEAD, p. 8, Canad. Ent. 1905, n. sp.
- Hemiglyptus* n. g. near *Glyptomorpha*, p. 412, *flavus* n. sp., Manila, p. 413, ASHMEAD, P. U. S. Mus. xxix.
- Holcalysia* n. g. near *Phenocarpa*, p. 268, *testaceipes* n. sp., Cape Colony, p. 269, CAMERON, Entomologist 1905.
- Holcapanteles* n. g. near *Urogaster*, p. 43, *sulciscutis* n. sp., Java, p. 44, CAMERON, Tijdschr. Ent. xlviii.
- Holcobracon* n. g. p. 89, *fulvus* n. sp., p. 90, pl. A, fig. 6, Ceylon, CAMERON, Spolia Zeylan. iii.
- Homiopterus pacificus*, Manila, ASHMEAD, p. 412, P. U. S. Mus. xxix, n. sp.
- Iphiaulax dylpeolus* n. n. for *apricans* Szépl. (Ann. Mus. Hungar. ii, p. 181), SZÉPLIGETI, p. 26, Ann. Mus. Hungar. iii.
- I. longiseta*, p. 3, *consultus*, p. 5, *cristatulus*, p. 6, *deliberator*, p. 7, *possessor*, *annulicornis*, *annellatus*, p. 8, Cameroons, SZÉPLIGETI, Arkiv Zool. ii, No. 14; *I. trimeni*, p. 240, *spilopus*, *I. ? platynotus*, p. 241, S. Africa, CAMERON, Rec. Albany Mus. i; *I. ornatocollis*, Grahamstown, CAMERON, p. 252, t. c.; *I. elizeus*, *smenus*, Deesa, CAMERON, p. 107, Entomologist 1905; *I. xanthopsis*, p. 82, *fulvopilosus*, *greeni*, p. 83, *ernesti*, p. 84, *erythrourea*, p. 85, pl. A, fig. 7, *haragamensis*, p. 86, Ceylon, CAMERON, Spolia Zeylan. iii; *I. lateritius*, Palembang, CAMERON, p. 39, Tijdschr. Ent. xlviii; *I. megapterus*, p. 23, *spilostigmus*, p. 24, *minos*, p. 25, *soranus*, p. 26, *ezerias*, p. 27, *cyrenius*, p. 28, *zaraces*, p. 29, *thespis*, p. 30, *amyris*, p. 31, *sibanensis*, *cilles*, p. 32, *tenuilineatus*, p. 33, *paternus*, p. 34, *smenus*, p. 35, *pheres*, p. 36, *æneus* (see op. cit. xlv, p. 229), p. 37, *mobilis*, p. 38, *longitarsis*, p. 39, *nitidiusculus*, p. 40 and xlv, p. 229, *pangarus*, p. 41, *monticola*, p. 42, *quænitarius*, p. 43, *trichiothecus*, p. 44, *abgarus*, *tristator*, p. 45, *pampatensis*, p. 46, *leptogaster*, p. 47, *ornaticornis*, p. 48, Sarawak, CAMERON, J. Straits Asiat. Soc. xlii; *I. longiseta*, *bifasciatus*, p. 28, *bisignatus*, *camerunensis*, *aser*, p. 29, *pulchricaudis*, *cristatus*, p. 30, *scoparius*, *speciosissimus*, *trifasciatus*, p. 31, *perspicax*, *longicornis*, p. 32, *australiensis*, *semirufus*, *ruficeps*, p. 33, *crenulatus*, p. 34, *micans*, *bipartitus*, p. 35, Australia, *palpalis*, New Guinea, p. 34, *genalis*, Bismarck Arch., *pretiosus*, Australia, p. 36, SZÉPLIGETI, Ann. Mus. Hungar. iii; *I. mamivacensis*, p. 380, *jutahacensis*, p. 381, *trillii*, *schrötkyii*, *javaryensis*, p. 382, *harperi*, *watertoni*, p. 383, S. America, *mathewi*, *occidentalis*, p. 384, Mexico, CAMERON, Tr. Amer. ent. Soc. xxxi; *I. tornowii*, Tucumán, BRÉTHES, p. 334, An. Mus. Buenos Aires (3) iv : n. spp.
- Kareba* n. g. *flavipes*, Mexico, p. 50, *testacea*, Guatemala, p. 51, n. spp., CAMERON, Invert. pacif. i.
- Lathrolestus dilatatus* (Thoms. in coll.), Sweden, NORDENSTRÖM, p. 207, Ent. Tidskr. xxvi, n. sp.
- Lissobracon* n. g. *Braconina*, *forticornis* n. sp., Sarawak, CAMERON, p. 103, J. Straits Asiat. Soc. xlv.
- Mesostoma* n. g. p. 42, *testaceipes* n. sp., Java, p. 43, CAMERON, Tijdschr. Ent. xlviii.
- Meteorus trilineatus*, Grahamstown, CAMERON, p. 342, Rec. Albany Mus. i; *M. brownii*, Manila, ASHMEAD, p. 968, P. U. S. Mus. xxviii; *M. bicolor*, N. S. Wales, SZÉPLIGETI, p. 53, Ann. Mus. Hungar. iii : n. spp.
- Microbracon luteiceps*, Manila, ASHMEAD, p. 412, P. U. S. Mus. xxix, n. sp.
- Microdus greeni*, Ceylon, CAMERON, p. 79, Spolia Zeylan. iii; *M. matangensis*, Matang, CAMERON, p. 115, J. Straits Asiat. Soc. xlv; *M. petiunculatus*, N. S. Wales, SZÉPLIGETI, p. 51, Ann. Mus. Hungar. iii; *M. trochanteratus*, Nicaragua, Cameron, p. 50, Invert. pacif. i : n. spp.
- Microgaster petiolaris*, p. 48, *legularis*, p. 49, N. S. Wales, SZÉPLIGETI, Ann.

- Mus. Hungar. iii; *M. carinicolis*, Ceylon, CAMERON, p. 81, Spolia Zeylan. iii.
- Microplitis philippinensis*, habits, BROWN, p. 357, Canad. Ent. 1905.
- Mimagathis* n. g. *Mimagathidina* subfam. n., *ashmeadi*, p. 450, *peruana*, *luta*, p. 451, n. spp., S. America, ENDERLEIN, Zool. Anz. xxviii.
- Neotrimorus* ? *luteus*, Borneo, CAMERON, p. 161, Ann. Nat. Hist. (7) xvi, n. sp.
- Opius albimanus*, N. S. Wales, SZÉPLIGETI, p. 54, Ann. Mus. Hungar. iii; *O. forticornis*, *iridipennis*, Nicaragua, CAMERON, p. 51, Invert. pacif. i : n. spp.
- Paraspinaria* n. g. *Rhogadina pilosa* n. sp., Ceylon, CAMERON, p. 88, pl. A, fig. 9, Spolia Zeylan. iii.
- Phanocarpa* ? *testaceipes*, Cape G. H., CAMERON, p. 343, Zeitschr. Hym. Dipt. v, n. sp.
- Phanerotoma hendecasisella*, Ceylon, CAMERON, p. 80, Spolia Zeylan. iii; *P. albiscapa*, Manila, ASHMEAD, p. 969, P. U. S. Mus. xviii; *P. nigroscutis*, Nicaragua, CAMERON, p. 49, Invert. pacif. i : n. spp.
- Philomacroploa* n. g. *Braconina*, *basimacula* n. sp., Ceylon, CAMERON, p. 88, Spolia Zeylan. iii.
- Plazopsis* n. g. *Braconina*, *sjostedti* n. sp., Cameroons, SZÉPLIGETI, p. 1, Arkiv Zool. ii, No. 14.
- Pseudapanteles agilis*, Manila, ASHMEAD, p. 969, P. U. S. Mus. xviii, n. sp.
- Pseudospinaria* n. g. for *Spin. attenuata* Westw., ENDERLEIN, p. 229, Stettin Ent. Zeit. lvi.
- Rhucospathius* n. g. near *Spathius*, *striolatus* n. sp., Ceylon, CAMERON, p. 86, Spolia Zeylan. iii.
- Rhamnura* n. g. near *Iphiaulax*, *flicauda*, p. 195, *crinicauda*, *capillicauda*, p. 196, *seticauda*, p. 197, *tenuicornis*, p. 198, n. spp., W. Africa, ENDERLEIN, Zool. Anz. xxiv.
- Rhogas capensis*, S. Africa, CAMERON, p. 243, Rec. Albany Mus. i; *R. melanosoma*, Manila, ASHMEAD, p. 970, P. U. S. Mus. xviii; *R. oculator*, Celebes, SZÉPLIGETI, p. 43, Ann. Mus. Hungar. iii; *R. astecus*, Mexico, CAMERON, p. 385, Tr. Amer. ent. Soc. xxxi : n. spp.
- Rhyssalus unicolor*, Manila, ASHMEAD, p. 970, P. U. S. Mus. xviii, n. sp.
- Rhyssosigalphus* n. g. *Sigalphina*, *R. rugosus* n. sp., Mexico, CAMERON, p. 260, Tr. Amer. ent. Soc. xxx.
- Sigalphus tripartitus*, Sydney, SZÉPLIGETI, p. 43, Ann. Mus. Hungar. iii, n. sp.
- Spathius fuscipennis*, Manila, ASHMEAD, p. 119, P. U. S. Mus. xxix; *S. antennalis*, p. 40, *albiventris*, *variipes*, p. 41, *fulvus*, p. 42, New Guinea, SZÉPLIGETI, Ann. Mus. Hungar. iii : n. spp.
- Spinaria curvispina* varr. n. *nigricanda*, *udei*, ENDERLEIN, p. 232, Stettin Ent. Zeit. lvi.
- S. philippinensis*, p. 230, *luzonensis*, p. 231, Philippines, ENDERLEIN, t. c. n. spp.
- Stantonia conspurcata*, Siam, p. 453, *kriegeri*, Columbia, p. 454, ENDERLEIN, Zool. Anz. xxviii, n. spp.
- Trichobracon* n. g. near *Spinaria*, p. 104, *pilosus* n. sp., Borneo, p. 105, CAMERON, J. Straits Asiat. Soc. xlv; *T.*, characters of Bornean, CAMERON, p. 161, Ann. Nat. Hist. (7) xvi.
- Tropobracon* n. g. *luteus* n. sp., Ceylon, CAMERON, p. 91, Spolia Zeylan. iii.
- Troporhogas* n. g. p. 92, *spilonotus*, *albipes*, p. 93, *maculipennis*, pl. A, fig. 5, *tricolor*, pl. A, fig. 8, p. 94, *ruficeps*, *lateralis*, p. 95, *trimaculata*, p. 96, n. spp., Ceylon, CAMERON, t. c.
- Urogaster albinervis*, Mexico, CAMERON, p. 261, Tr. Amer. ent. Soc. xxx, n. sp.

EVANIIDÆ and ROPRONIIDÆ.

[Cf. BRADLEY (186, 189), CAMERON (240, 247, 261, 267, 270), ENDERLEIN (502), KIEFFER (847).]

Classification and table of genera, ENDERLEIN, pp. 699, 700, Zool. Anz. xxviii.

Genera of *Evaniidæ*, BRADLEY, p. 26, Zeitschr. Hym. Dipt. v.

Corrections orthographical and taxonomic, BRADLEY, pp. 63, 64, Canad. Ent. 1905.

Brachygaster magnus, p. 712, *reticulifer*, *fraternus*, p. 713, Peru, ENDERLEIN, Zool. Anz. xxviii, n. spp.

Deraidontus violaceus, Washington, BRADLEY, p. 26, Zeitschr. Hym. Dipt. v, n. sp.

Evania alboannulata ♂, p. 708, var. n. *tricarinulata*, p. 709, *orientalis* ♂, p. 709, ENDERLEIN, Zool. Anz. xxviii.

E. schonlandi, S. Africa, CAMERON, p. 243, Rec. Albany Mus. i; *E. interstitialis*, p. 74, *peradeniyæ*, p. 75, Ceylon, CAMERON, Spolia Zeylan. iii; *E. nyassica*, E. Africa, p. 702, *kriegeriana*, Borneo, p. 703, *solax*, Burma, p. 704, *sumatrensis*, p. 706, *micholitsi*, p. 707, Sumatra, *miniacea*, Peru, p. 710, ENDERLEIN, Zool. Anz. xxviii; *E. rubra*, Borneo, CAMERON, p. 100, J. Straits Asiat. Soc. xlv: n. spp.

Evaniella n. g. type *unicolor* Say, BRADLEY, p. 64, Canad. Ent. 1905.

Evaniellus n. g. pp. 701 & 714, *peruanus*, p. 714, *gracilis*, Peru, *chalcidipennis*, Bolivia, p. 715, ENDERLEIN, Zool. Anz. xxviii, n. spp.

Evanius rufithorax, Peru, ENDERLEIN, p. 711, t. c. n. sp.

Gasteruption lissocephalus, Cape Colony, CAMERON, p. 227, Entomologist 1905; *G. tricoloratum*, p. 76, *ceylonicum*, p. 77, Ceylon, CAMERON, Spolia Zeylan. iii; *G. rufo-maculatum*, Borneo, CAMERON, p. 99, J. Straits Asiat. Soc. xlv; *G. nevadense*, Nevada, *pyrrhosternum*, p. 41, *rubrofasciatum*, p. 42, California, KIEFFER, Invert. pacif. i: n. spp.

Pristaulacus erythrocephalus, Borneo, CAMERON, p. 159, Ann. Nat. Hist. (7) xvi; *P. erythrocephalus*, Borneo, CAMERON, p. 98, J. Straits Asiat. Soc. xlv: n. spp.

Pseudevania n. g., type *E. marginata*, BRADLEY, p. 64, Canad. Ent. 1905.

Ropronia, a distinct family *Roproniidæ*, BRADLEY, p. 16, Ent. News Philad. xvi.

R. ashmeadi, New York, id. p. 17, t. c. n. sp.

Semaodogaster n. n. for *Brachygaster* Steph., BRADLEY, p. 63, Canad. Ent. 1905.

STEPHANIDÆ and MEGALYRIDÆ.

Stephanidæ, Genera and classification, ENDERLEIN, pp. 473–477, Zool. Anz. xxviii.

Diastephanus n. g. *szepligetii* n. sp., Sierra Leone, ENDERLEIN, p. 476, Zool. Anz. xxviii.

Stephanus rufo-ornatus, Queensland, CAMERON, p. 45, Tijdschr. Ent. xlviii, n. sp.

Megalyra erythropus, Queensland, CAMERON, p. 46, t. c.; *M. szepligetii*, S. Australia, BRADLEY, p. 396, Tr. ent. Soc. London 1905: n. spp.

Parastephanus n. g. for *macrurus* Schletter. etc., ENDERLEIN, p. 475, Zool. Anz. xxviii.

TRIGONALIDÆ.

[Cf. ENDERLEIN (511), SCHULZ (1359).]

Classification of *Trigonalidæ*, with 3 subfamilies, SCHULZ, pp. 102-104, Hymen. Studien.

Discenea n. g. for *Trigonalys natalensis*, ENDERLEIN, p. 199, Zool. Anz. xxix.

Liaba cisandina, Brazil, SCHULZ, p. 93, Hymen. Studien. n. sp.

Orthogonalys n. g. p. 76, *boliviana* n. sp., Bolivia, p. 81, SCHULZ, t. c.

Platygonalys n. g. p. 86, *phylogenetica* n. sp., Bolivia, p. 61, SCHULZ, t. c.

Trigonalys hahni, localities, distribution, and characters, SCHULZ, pp. 70-76, t. c.; *T. hahni* var. n. *phæognatha*, ENDERLEIN, p. 200, Zool. Anz. xxix.

CHALCIDIDÆ.

[Cf. ASHMEAD (31, 33, 34), BRÈTHES (187), CAMERON (254, 255, 257, 259, 262, 264, 268, 269, 270), DE STEFANI PEREZ (406, 407), FROGGATT (612), GIRAULT (663), KIEFFER (846), KÜNCKEL (905), MARCHAL (1006), MAYR (1017), MEUNIER (1036, 1040), SILVESTRI (1393), WEBSTER (1593).]

Parasites from Cecidomyiid galls, DE STEFANI PEREZ, Marcellia iv, pp. 113, 114.

Development of *Litomastix truncatellus*, history of polar bodies, two forms of larvæ, SILVESTRI, Rend. Acc. Lincei xiv, ii, pp. 534-542.

Summary of Marchal's account, of last year, of *Encyrtus fuscicollis*, CLÈVES, pp. 161-164, cuts, Naturaliste 1905.

Antrocephalus maculipennis, rufipes, Borneo, CAMERON, p. 95, J. Straits Asiat. Soc. xlv, n. spp.

Aphycus albidulavatus, Manila, ASHMEAD, p. 404, P. U. S. Mus. xxix, n. sp.

Apterencyrtus n. g. *Mirini, pulchricornis* n. sp., Manila, ASHMEAD, p. 5, Canad. Ent. 1905.

Asparagobius n. g. *Perilampides*, p. 549, *braunsi* n. sp., S. Africa, p. 553, pl. ii, fig. 1, MAYR, Verh. Ges. Wien 1905.

Brasema ruficollis, California, CAMERON, p. 125, Invert. pacif. i; *B. maculipennis, maculicornis*, Centr. America, CAMERON, p. 65, t. c. : n. spp.

Cænacis grandiclava, host, FRIEDRICH, p. 494, Zeitschr. Insbiol. i.

Centrochalcis n. g. *octodentata* n. sp., Transvaal, CAMERON, p. 230, Zeitschr. Hym. Dipt. v.

Chalcis spilopus, rotundata, S. Africa, CAMERON, p. 231, t. c. ; *C. capensis*, p. 311, *pymi*, p. 312, S. Africa, CAMERON, Rec. Albany Mus. i ;

C. bilobata, p. 283, *marginata*, p. 284, India, CAMERON, Zeitschr. Hym. Dipt. v ; *C. borneanus*, Borneo, CAMERON, p. 52, J. Straits Asiat. Soc.

xlii ; *C. banksi*, Manila, ASHMEAD, p. 964, P. U. S. Mus. xviii : n. spp.

Celocyba viridilineata, Australia, FROGGATT, p. 223, Agric. Gaz. N. S. W. xvi, n. sp.

Decatoma, tabulation of species, and notices of host-galls, MAYR, pp. 530-549, Verh. Ges. Wien 1905.

D. plagiotrochi, Montpellier, p. 535, *scorzonerae*, Vienna, p. 540, MAYR, t. c. n. spp.

Dirhinus auratus, Manila, ASHMEAD, p. 402, P. U. S. Mus. xxix, n. sp.

Eudecatoma fulva, Nicaragua, CAMERON, p. 62, Invert. pacif. i, n. sp.

Eupelmus tenuicornis, p. 192, *carinatus*, p. 194, Bengal, KIEFFER, Ann. Soc. Bruxelles xxix, n. spp.

Eurycanium saiseticæ, Manila, ASHMEAD, p. 405, P. U. S. Mus. xxix, n. sp.

Eurytomu striatula, Cape Colony, CAMERON, p. 345, Zeitschr. Hym.

- Dipt. v ; *E. banksi, albotibialis*, Manila, ASHMEAD, p. 965, P. U. S. Mus. xxviii ; *E. sulcata*, Bengal, KIEFFER, p. 192, Ann. Soc. Bruxelles xxix ; *E. erythroaspis*, p. 62, *xanthopus, pilicornis*, p. 63, Centr. America, CAMERON, Invert. pacif. i : n. spp.
- Euzysoma testaceitarsis*, Cape Colony, CAMERON, p. 344, Zeitschr. Hym. Dipt. v, n. sp.
- Hyperteles longicauda*, Bengal, KIEFFER, p. 195, Ann. Soc. Bruxelles xxix, n. spp.
- Hockeria melanaria*, Grahamstown, CAMERON, p. 314, Rec. Albany Mus. i, n. sp.
- Holcuspelmus* n. g. near *Brasema*, p. 316, *bifasciatus* n. sp., Cape Colony, p. 317, CAMERON, t. c.
- Howardiella tarsata*, Manila, ASHMEAD, p. 403, P. U. S. Mus. xxix, n. sp.
- Icosoma* ; in timothy, and parasite, WEBSTER, pp. 114–116, P. ent. Soc. Washington vii.
- Lirata iridicolor*, p. 60, *fulvicornis, sulcifacies, nigricentris*, p. 61, Nicaragua, CAMERON, Invert. pacif. i, n. spp.
- Macreupelmus pulchriceps*, Nicaragua, CAMERON, t. c. n. sp.
- Megacolus fulvipennis*, p. 96, *ruftarsis, striolatus*, p. 97, Sarawak, CAMERON, J. Straits Asiat. Soc. xlv, n. spp.
- Megastigmus immaculatus*, Manila, ASHMEAD, p. 401, P. U. S. Mus. xxix ; *M. brachychitoni*, Australia, FROGGATT, p. 233, fig. 4, Agric. Gaz. N. S. W. xvi : *M. fulvus*, Nicaragua, CAMERON, p. 58, Invert. pacif. i : n. spp.
- Mesidia minuta*, Zanzibar copal, MEUNIER, p. 214, Rev. Sci. Bourbonnais 1905, n. sp.
- Microcetus* n. g. *formidolosus* n. sp., Madagascar in copal, MEUNIER, p. 93, Miscell. ent. xiii.
- Monodontomerus phormio*, the parasitic habits, KÜNCKEL, p. 227, Bull. Mus. Paris 1905.
- Nesolynx* n. g. *Elachertini, flavipes* n. sp., Manila, ASHMEAD, p. 966, P. U. S. Mus. xxviii ; *N. flavipes*, habits, BROWN, p. 358, Canad. Ent. 1905.
- Oencyrtus papilionis*, Philippines, ASHMEAD, p. 4, Canad. Ent. 1905, n. sp. ; *O. papilionis*, habits, BROWN, p. 359, t. c.
- Oncochalcis deesensis*, India, CAMERON, p. 285, Zeitschr. Hym. Dipt. v, n. sp.
- Ormocerus pallidipes*, Manila, ASHMEAD, p. 402, P. U. S. Mus. xxix, n. sp.
- Paracentrobia flavipes*, N. America, from eggs of *Anthonomus*, GIRAULT, p. 287, Ent. News Philad. xvi, n. sp.
- Parasaphes townsendi*, Manila, ASHMEAD, p. 404, P. U. S. Mus. xxix, n. sp.
- Perilampus* ; tabulation and notes, MAYR, pp. 562–569, Verh. Ges. Wien 1905.
- P. tristis*, Germany, MAYR, p. 566, t. c. ; *P. reticulatus, levioeps*, p. 59, *albitarsis*, p. 60, Nicaragua, CAMERON, Invert. pacif. i : n. sp.
- Philonides flavicollis*, Gibraltar, CAMERON, p. 150, Zeitschr. Hym. Dipt. v, n. sp.
- Philotrypesis ficola*, Philippines, ASHMEAD, p. 400, P. U. S. Mus. xxix, n. sp.
- Phasgonophora rufo-ornata*, Grahamstown, CAMERON, p. 310, Rec. Albany Mus. i, n. sp.
- Plagiosmiera* n. g. *ashmeadi* n. sp., Nicaragua, CAMERON, p. 56, Invert. pacif. i.
- Platychalcis* n. g. near *Halticella, flavicollis* n. sp., Nicaragua, CAMERON, p. 57, t. c.
- Plutothrix minutissima*, Zanzibar copal, MEUNIER, p. 215, pl. 1, fig. 13, Rev. Sci. Bourbonnais 1905, n. sp.

- Rekabia* n. g. near *Pleurotropis*, p. 65, *testaceipes* n. sp., Nicaragua, p. 66, CAMERON, Invert. pacif. i.
- Sericops* referred to *Eurytomides*, characters, MAYR, p. 569, Verh. Ges. Wien 1905.
- Smicra bergi* to *Spilochalchis*, BRËTHES, p. 23, An. Mus. Buenos Aires (3) iv.
- Spalangia*; table of European, KIEFFER, p. 2, Berlin. ent. Zeitschr. l.
- S. formicaria*, Luxemburg, KIEFFER, p. 1, t. c. n. sp.
- Spilochalchis pilosoma*, p. 53, *managuaensis*, *denticoxis*, p. 54, *segovia*, *belti*, *marcosensis*, p. 55, Nicaragua, CAMERON, Invert. pacif. i, n. sp.
- Spilomegastigmus* n. g. near *Megastigmus*, p. 73, *ruficeps* n. sp., Ceylon, p. 74, pl. A, fig. 3, CAMERON, Spolia Zeylan. iii.
- Stomatocera sulcata*, Manila, ASHMEAD, p. 401, P. U. S. Mus. xxix, n. sp.
- Syntomaspis purpureomaculata*, Centr. America, CAMERON, p. 58, Invert. pacif. i, n. sp.
- Tanycoryphus* n. g. near *Euchalcis*, p. 312, *sulcifrons* n. sp., Grahamstown, p. 313, CAMERON, Rec. Albany Mus. i.
- Tetrasmicra bakeriana*, Nicaragua, CAMERON, p. 56, Invert. pacif. i, n. sp.
- Tetrastichoides browni*, Manila, ASHMEAD, p. 113, P. U. S. Mus. xxix; *T. manilensis*, Philippines, ASHMEAD, p. 5, Canad. Ent. 1905: n. spp.
- Tetrastichus xanthomelaneæ*, nomenclature, p. 81, habits, oviposition, pp. 64-68, MARCHAL, Bull. Soc. ent. France 1905.
- T. basimacula*, p. 63, *nicaraguaensis*, p. 64, Nicaragua, CAMERON, Invert. pacif. i; *T. platensis*, Buenos Aires, BRËTHES, p. 23, An. Mus. Buenos Aires (3) iv: n. spp.
- Torymus bakeri*, Nicaragua, p. 58, *astecus*, Mexico, p. 59, CAMERON, Invert. pacif. i, n. spp.
- Trichilogaster* n. g. *Perilampides*, p. 555, *T. pendula* n. sp., Australia, p. 560, and *Cynips maideni*, *longifolia* Frogg., MAUR, Verh. Ges. Wien 1905.
- Trigonomerus* sp., STEBBING, p. 429, pl. xxxviii, Indian Forest. xxxi.

PROCTOTRYPIDÆ (incl. MYMARIDÆ and BETHYLIDÆ).

[Cf. ASHMEAD (31, 32, 33, 34, 38), BRUES (199), CAMERON (250, 261, 263, 270, 272), COCKERELL (324), GIRAULT (662, 663, 668), KIEFFER (840-843, 846), MEUNIER (1036, 1037), PERKINS (1150).]

The continuation of KIEFFER & MARSHALL's monograph of *Proctotrypidæ* of Europe and Algeria extends to p. 288 and pl. xii of André's Spec. Hym. Eur. vol. ix.

KIEFFER includes *Bethylinæ* in *Proctotrypides*, though recognising that they are allied to *Scoliidæ*.

Mymaridæ, taxonomy, PERKINS, Bull. exp. Stat. Hawaii i, No. 6.

Mymaridæ in baltic amber, see p. 128, Palæoentomology.

Structure and function of foot of *Dryinus* ♀, KIEFFER, pp. 6-13, Zeitschr. Insbiol. i.

Acrepyris n. g., type *reticulatus* Kieff., KIEFFER, p. 249, Hym. Eur. Alg. ix. *Alaptus immaturus*, Queensland, PERKINS, p. 197, Bull. exp. Stat. Hawaii i, n. sp.

Allobethylus n. g. *Bethylinæ*, p. 247, for nondescript Papuan species, KIEFFER, Hym. Eur. Alg. ix.

Anagrus hydrophilus, Turkestan, ASHMEAD, p. 213, Ent. News Philad. xvi, n. sp.

Anaphes comotracheli, Georgia, from eggs of *Conotrachelus*, GIRAULT, p. 220, Ent. News Philad. xvi, n. sp.

Anectadius n. g. near *Ectadius*, *striolatus*, p. 187, *bengalensis*, p. 189, n. spp., Bengal, KIEFFER, Ann. Soc. Bruxelles xxix.

- Anopadias lusonicus*, Philippines, ASHMEAD, p. 964, P. U. S. Mus. xlviii, n. sp.
- Anteon subapterus*, Scotland, p. 138, *reticulatus*, France, p. 140, *crunulatus*, Scotland, p. 141, *thomsoni*, Sweden, p. 142, *arcuatus*, p. 144, *vicinus*, p. 145, Scotland, *marginatus*, France, p. 147, *imberbis*, Scotland, p. 149, *longiforceps*, p. 151, *carinatus*, p. 152, France, *albidicollis*, Austria, p. 157, *rubrifrons*, p. 158, *citrinicollis*, p. 159, *ruficollis*, p. 160, Hungary, *gaullei*, France, p. 161, *cameroni*, Scotland, p. 162, *maculipennis*, Sweden, p. 164, *gracilicollis*, p. 165, *fusiformis*, p. 166, Scotland, *punctatus*, France, p. 168, *leugatus*, Switzerland, p. 169, *mayeti*, Austria, p. 170, *rectus*, p. 171, *nigricornis*, p. 172, *scoticus*, p. 174, *triareolatus*, p. 175, *brevicollis*, *Navitarsus*, p. 176, *æqualis*, p. 177, *melanocera*, p. 179, Scotland, *crassicauda*, France, p. 180, *niellinipes*, Scotland, p. 181, *proximus*, Hungary, p. 182, *forsteri*, Germany, p. 183, *procericornis*, Scotland, p. 184, *luteipes*, France, p. 187, *declivis*, p. 188, *pallidinervis*, p. 189, Scotland, *dolichocerus*, p. 190, *flavipes*, France, *flavinervis*, p. 192, *parvulus*, p. 193, Scotland, *tripartitus*, Trieste, *punctulatus*, France, p. 194, *nitidus*, Scotland, *albicoxis*, France, p. 195, *fusoclavatus*, p. 196, *filicornis*, *triangularis*, p. 197, *xanthostigma*, Scotland, *sericeus*, France, p. 198, *indivinus*, p. 199, *divisus*, Scotland, *trichotomma*, Hungary, p. 200, *trivialis*, Scotland, p. 201, *dorsalis*, France, *vulgaris*, Europe, p. 202, *succineipes*, Austria and Scotland, p. 203, *giraudi*, Hungary, *minutus*, p. 204, *nigroclavatus*, Scotland, *radialis*, Hungary, p. 206, *integer*, Scotland etc., *parricollis*, Europe, p. 206, *pyrenaicus*, France, p. 207, *curvinervis*, *fractinervis*, p. 208, *hyalinipennis*, Scotland, *fuscipennis*, Hungary, p. 209, KIEFFER, Hym. Eur. Alg. ix, n. spp.
- Anteon annulicornis*, Mexico, BRUES, p. 185, Bull. Wisconsin Soc. iii, n. sp.
- Aphanogmus formicarius*, Draufeld, KIEFFER, p. 6, Berlin. ent. Zeitschr. l, n. sp.
- Aphanomerus* n. g. *Platygasterides* but anomalous, *bicolor*, pl. xi, fig. 1, p. 201, *niger*, *rufescens*, p. 202, *pusillus*, p. 203, n. spp., Queensland, PERKINS, Bull. exp. Stat. Hawaii i.
- Aphelopus albipes*, Bitche, KIEFFER, p. 217, Hym. Eur. Alg. ix, n. sp.
- Bethylinæ*, table of genera, KIEFFER, pp. 98–109, Ann. Soc. Bruxelles xxix.
- Bethylus*, recharacterised and purified, KIEFFER, pp. 128, 129, t. c.
- B. apteryx*, Hungary, p. 272, *hamatus*, Morocco, p. 276, *arcuatus*, p. 277, *gaullei*, p. 279, Tangier, *lineatus*, Italy, p. 280, KIEFFER, Hym. Eur. Alg. ix, n. spp.
- Bothriopria* n. g. *Diapriinae*, p. 134, *saussurei* n. sp., Madagascar, p. 135, KIEFFER, Ann. Soc. Bruxelles xxix.
- Cumproptera melotarsa*, N. America, GIRAULT, p. 91, Psyche xii, n. sp.
- Carina* n. g. *Belytinae*, p. 140, *nitida* n. sp., Burma, p. 141, KIEFFER, Ann. Soc. Bruxelles xxix.
- Ceraphron opacus*, Luxembourg, KIEFFER, p. 6, Berlin. ent. Zeitschr. l, n. sp.
- Ceratopyris* n. g. *Bethylinæ*, p. 285, *fuscipennis* n. sp., Hungary, p. 287, KIEFFER, Hym. Eur. Alg. ix.
- Ceratobæus incertus*, Zanzibar copal, MEUNIER, p. 213, pl. 1, fig. 10, Rev. Sci. Bourbonnais 1905, n. sp.
- Chalcoyonatopus* n. g. *Dryinidæ*, p. 46, *gigas*, *optabilis*, *decoratus*, p. 47, Queensland, *P. (Eugonatopus)* subg. n., p. 46) *pseudochromus*, Ohio, p. 48, n. spp., PERKINS, Bull. exp. Stat. Hawaii i.
- Chelogygnus atriceps* to *Bocchus*, BRUES, p. 184, Bull. Wisconsin Soc. iii.
- C. ferrugineus*, p. 183, *grandis*, p. 184, N. America, BRUES, Bull. Wisconsin Soc. iii, n. spp.
- Chlorodryinus* n. g. *Dryinidæ*, *pallidus* n. sp., Queensland, PERKINS, p. 57, Bull. exp. Stat. Hawaii i.

- Canopria* n. g. *Diapriinae*, p. 132, *fuscipennis* n. sp., Costa Rica with Azteca, p. 133, KIEFFER, Ann. Soc. Bruxelles xxix.
- Cryptobethylus* n. g. *Bethylinae*, p. 242, HALIDAY & MARSHALL, spec. 1 Italy, p. 259, Hym. Eur. Alg. ix.
- Diapria inconspicua*, Réunion, KIEFFER, p. 139, Ann. Soc. Bruxelles xxix; *D. philippinensis*, Manila, ASHMEAD, p. 3, Canad. Ent. 1905; *D. madeira*, Madeira, p. 7, *clavaticapex*, socia, p. 8, Luxemburg, KIEFFER, Berlin. ent. Zeitschr. 1: n. spp.
- Disepyris* n. g. *rufipes* n. sp., Malabar, KIEFFER, p. 115, Ann. Soc. Bruxelles xxix.
- Disognus obsoletus*, Connecticut, BRUES, p. 186, Bull. Soc. Wisconsin iii, n. sp.
- Digoniosus* n. g. *Bethylinae*, p. 245, for *Perisemus oregonensis*, KIEFFER, Hym. Eur. Alg. ix.
- Dryinidae*, natural history and taxonomy, PERKINS, Bull. exp. Stat. Hawaii i, pt. 1.
- Dryinus longicollis*, Spain, p. 75, *sepligetii*, Hungary, p. 77, *dracunculus*, Spain, p. 82, *draco*, Andalusia, p. 83, KIEFFER & MARSHALL, Hym. Eur. Alg. ix; *D. browni*, Manila, ASHMEAD, p. 109, P. U. S. Mus. xxix: n. spp.
- Ecthrodelpheus nigricollis*, *bifuscatus*, Queensland, PERKINS, p. 49, Bull. exp. Stat. Hawaii i, n. spp.
- Epigonatopus* n. g. *Dryinidae*, *solitarius* n. sp., Queensland, PERKINS, p. 45, t. c.
- Epyris*, synonymy, generic repartition of its species, KIEFFER, p. 111, Ann. Soc. Bruxelles xxix.
- E. foveatus*, Ceylon, CAMERON, p. 71, Spolia Zeylan. iii; *E. analis*, India, p. 111, *lutescens*, Australia, *alluaudi*, Madagascar, p. 113, KIEFFER, Ann. Soc. Bruxelles xxix; *E. tagala*, Manila, ASHMEAD, p. 109, P. U. S. Mus. xxix; *E. varidens*, p. 262, *mexicanus*, p. 263, Mexico, CAMERON, Tr. Amer. ent. Soc. xxx: n. spp.
- Eugonatopus* subg. n. of *Chalcogonatopus* q. v.
- Eukoebeleria* n. g. *Dryinidae*, *mirabilis* n. sp., Ohio, PERKINS, p. 59, Bull. exp. Stat. Hawaii i.
- Galesus magretti*, Burma, KIEFFER, p. 138, Ann. Soc. Bruxelles xxix; *G. manila*, p. 397, *luzonicus*, p. 398, Philippines, ASHMEAD, P. U. S. Mus. xxix; *G. viereckii*, Connecticut, BRUES, p. 187, Bull. Wisconsin Soc. iii: n. spp.
- Gonatocerus cingulatus*, Queensland, PERKINS, p. 196, Bull. exp. Stat. Hawaii i; *G. anthonomi*, N. America, GIRAULT, p. 288, Ent. News Philad. xvi: n. spp.
- Gonatopus striatus*, Austria, p. 92, *albolineatus*, Algeria, p. 95, *dryini-formis*, Spain, p. 100, *multicolor*, Sicily, p. 102, *mayeti*, Austria, p. 103, *polychromus*, Cette, p. 105, *sciophanes*, Spain, p. 107, *glaber*, p. 111, *filicornis*, p. 112, Mont-de-Marsan, *myrmicophilus*, Luxembourg, p. 113, *gracilis*, France, p. 115, *distinguendus*, England, p. 116, *luteicornis*, Trieste, p. 117, *hispanicus*, Spain, p. 118, *conjunctus*, Sweden, p. 119, *marshalli*, England, p. 121, *trinodis*, Germany, p. 122, KIEFFER & MARSHALL, Hym. Eur. Alg. ix; *G. australis*, Queensland, PERKINS, p. 41, Bull. exp. Stat. Hawaii i: n. spp.
- Gonizus maurus*, Algeria, MARSHALL, p. 266, Hym. Eur. Alg. ix; *G. rostratus*, Madagascar, KIEFFER, p. 127, Ann. Soc. Bruxelles xxix: n. spp.
- Hadronotus flavipes*, Manila, ASHMEAD, p. 399, P. U. S. Mus. xxix, n. sp.
- Haplogonatopus* n. g. *Dryinidae*, *apicalis*, p. 39, *moestus*, Queensland, *americanus*, Ohio, p. 40, n. spp., PERKINS, Bull. exp. Stat. Hawaii i.
- Holcepyris* n. g. *Bethylinae*, p. 121, *andrei* n. sp., India, p. 122, KIEFFER, Ann. Soc. Bruxelles xxix.

- Hoploteleia pacifica*, Philippines, ASHMEAD, p. 112, P. U. S. Mus. **xxix**, **n. sp.**
- Labeo albipennis*, p. 222, *conjunctus*, p. 223, *albosignatus*, *testaceipes*, p. 224, Hungary, KIEFFER, Hym. Eur. Alg. ix, **n. spp.**
- Lepidoscelio n. g. Scelioninae*, p. 129, *fuscipennis n. sp.*, Madagascar, p. 130, KIEFFER, Ann. Soc. Bruxelles **xxix**.
- Lonchodryinus n. g. p. 95, tricolor n. sp.*, Brazil, p. 96, KIEFFER, t. c.
- Loxotropa modesta*, Pennsylvania, BRUES, p. 188, Bull. Wisconsin Soc. **iii**, **n. sp.**
- Macroteleia manilensis*, Philippines, ASHMEAD, p. 963, P. U. S. Mus. **xxviii**; *M. rufipes*, Nicaragua, *testaceinerva*, Panama, CAMERON, p. 52, Invert. pacif. i : **n. spp.**
- Megaspilus clavipennis*, p. 4, *dimorphus*, *lasiophilus*, p. 5, Luxemburg, KIEFFER, Berlin. ent. Zeitschr. **i**, **n. spp.**
- Mystrocnemis n. g. p. 109, Bethylinae, erythrorhox*, Rangoon, **n. sp.**, p. 110, KIEFFER, Ann. Soc. Bruxelles **xxix**.
- Neochelogyne n. g. Dryinidae*, p. 60, *typicus*, *leiosomus*, p. 62, *dimidiatus*, *nigricornis*, p. 63, *destructor*, *cognatus*, p. 64, *parvulus*, *coriaceus*, *pallidicornis*, p. 65, **n. spp.**, Queensland, PERKINS, Bull. exp. Stat. Hawaii **i**.
- Neodryinus n. g. Dryinidae*, p. 50, *koebeleri*, p. 51, *nelsoni*, *raptor*, with var. *umbratus*, p. 52, **n. spp.**, Queensland, PERKINS, t. c.
- Neogonatopus n. g. Dryinidae*, p. 42, *ombrodes*, *erythrodes*, *obscurissimus*, p. 43, *brunnescens*, Ohio, *pulcherrimus*, *dubiosus*, Queensland, p. 44, *pallidiceps*, California, p. 45, **n. spp.**, PERKINS, t. c.
- Neurepyris n. g. p. 251*, for a nondescript Erythrean species, KIEFFER, p. 251, Hym. Eur. Alg. ix.
- Neuropria inquilina*, Luxemburg, KIEFFER, p. 9, Berlin. ent. Zeitschr. **i**, **n. sp.**
- Opiathacantha nigriclavata*, Manila, ASHMEAD, p. 399, P. U. S. Mus. **xxix**, **n. sp.**
- Ooctonus vulgatus*, DEL GUERCIO, pp. 299, 300, Redia **ii**.
- O. australensis*, Queensland, PERKINS, p. 195, Bull. exp. Stat. Hawaii **i**, **n. sp.**
- Pachygonatopus n. g. Dryinidae*, p. 45, *melanias n. sp.*, Queensland, p. 46, PERKINS, t. c.
- Paradryinus n. g. Dryinidae*, p. 53, *koebeleri*, p. 54, *venator*, *threnodes*, *gigas*, p. 55, *leptias*, *varipes*, p. 56, **n. spp.**, Queensland, PERKINS, t. c.
- Paragonatopus n. g. p. 40, nigricans n. sp.*, Queensland, p. 41, PERKINS, t. c.
- Paralaelius n. n. for Bethylus* Ashm. nec Först., KIEFFER, p. 129, Ann. Soc. Bruxelles **xxix**.
- Paraloelius n. g. Bethylinae, firmipennis n. sp.*, Cape Colony, CAMERON, p. 254, Rec. Albany Mus. **i**.
- Paranteon n. g. myrmecophilus n. sp.*, Queensland, PERKINS, p. 67, Bull. exp. Stat. Hawaii **i**.
- Paranierola gallicola*, Italy, with var. *punctata*, KIEFFER, p. 261, Hym. Eur. Alg. ix, **n. sp.**
- Planepyrus n. g. for a nondescript African sp.*, KIEFFER, p. 249, t. c.
- Platanoxus n. g. Bethylinae*, p. 244, for some N. American *Anoxus*, KIEFFER, p. 244, t. c.
- Platygaster tibialis*, Bengal, KIEFFER, p. 191, Ann. Soc. Bruxelles **xxix**, **n. sp.**
- Pleuropria n. g. Diapriinae*, p. 136, *maculipennis n. sp.*, Burma, p. 137, KIEFFER, t. c.
- Polynema bergi*, Turkestan, ASHMEAD, p. 214, Ent. News Philad. **xvi**; *P. picipes*, N. America, GIRAULT, p. 91, Psyche **xii**; *P. redwinski*, Hawaiian islands, PERKINS, p. 196, Bull. exp. Stat. Hawaii **i** : **n. spp.**

- Pristepyris* n. g. *Bethylinæ*, p. 118, *rugicollis*, Malacca, p. 119, *levicollis*, Madagascar, p. 120, n. spp., KIEFFER, Ann. Soc. Bruxelles xxix.
- Pristobethylus* n. g. for *Epyris serricollis* Westw., KIEFFER, p. 248, Hym. Eur. Alg. ix.
- Pristocera*, ♀, KIEFFER, p. 124, Ann. Soc. Bruxelles xxix.
- P. nigrita*, Congo, p. 125, *rufa*, India, p. 126, KIEFFER, t. c. n. spp.
- Procalyza* n. g. for *Calyza westwoodi* Cam., KIEFFER, p. 248, Hym. Eur. Alg. ix.
- Proctotrypes coloradicus*, Colorado, COCKERELL, p. 204, Ann. Nat. Hist. (7) xv, n. sp.; *P. coloradicus* and *pallidus* compared, COCKERELL, p. 362, Canad. Ent. 1905.
- Prolaelius* n. g. (= *Paralaelius* Cam. nec Kieff.), KIEFFER, p. 251, Hym. Eur. Alg. ix.
- Promesitius* n. g. *Bethylinæ*, *flavicollis* n. sp., Australia, KIEFFER, p. 123, Ann. Soc. Bruxelles xxix.
- Propriostocera* n. g. *Bethylinæ*, p. 247, for East Indian species, KIEFFER, Hym. Eur. Alg. ix.
- Prosclogibba* n. g. *Bethylinæ*, p. 241, KIEFFER, t. c.
- Prosanteon* n. g. *Dryinidæ*, *chelognoides* n. sp., Queensland, PERKINS, p. 66, Bull. exp. Stat. Hawaii i.
- Prostierola* n. g. *Bethylinæ*, p. 243, for *Epyris nasalis* Westw., KIEFFER, p. 243, Hym. Eur. Alg. ix.
- Pseudisobranchium* n. g. = (*Isobranchium* Ashm. nec Först.), KIEFFER, p. 124, Ann. Soc. Bruxelles xxix.
- Pseudogonatopus* n. g. *Dryinidæ*, p. 34, *turandæ*, p. 35, *juncetorum*, *palustris*, *saccharetorum*, p. 36, *dichromus*, Queensland, *americanus*, Ohio, p. 37, *opacus*, *stenocrani*, with var. *dubiosus*, Queensland, p. 38, n. spp., PERKINS, Bull. exp. Stat. Hawaii i.
- Roena* n. g. *Scelioni*, p. 225, *cariniscutis* n. sp., S. Africa, p. 226, CAMERON, Rec. Albany Mus. i.
- Rhacoteleia* n. g. *Bethylinæ*, p. 72, *pilosa* n. sp., Ceylon, p. 73, pl. A, fig. 2, CAMERON, Spolia Zeylan. iii.
- Scelio afer*, Gambia, KIEFFER, p. 130, Ann. Soc. Bruxelles xxix; *S. philippinensis*, Manila, ASHMEAD, p. 963, P. U. S. Mus. xxviii: n. spp.
- Sierolomorpha*, female, BRUES, p. 186, Bull. Wisconsin Soc. iii.
- Thaumetodryinus* n. g. *Dryinidæ*, *koebeli* n. sp., Queensland, PERKINS, p. 58, Bull. exp. Stat. Hawaii i.
- Triglenus* n. g. without species, MARSHALL, p. 250, Hym. Eur. Alg. ix.
- Trissepyris* n. g. p. 116, *ruficeps* n. sp., Congo, p. 117, KIEFFER, Ann. Soc. Bruxelles xxix.
- Tropidopria hospes*, p. 6, *sociata*, p. 7, Luxemburg, KIEFFER, Berlin. ent. Zeitschr. I, n. spp.
- Zelotypa xanthopus*, Mexico, CAMERON, p. 262, Tr. Amer. ent. Soc. xxi, n. sp.

CYNIPIDÆ.

- [Cf. ASHMEAD (32-34), CAMERON (239, 251), GRAEFFE (685), KIEFFER (683, 847).]
- Andricus radialis*, gall, p. 56, *A. spp.*? galls, pp. 57, 58, TROTTER, Marcellia iv.
- Callirhytis maculipennis*, p. 42, *eriophora*, *clarimontis*, p. 43, *bakeri*, *polythyra*, p. 44, N. America, KIEFFER, Invert. pacif. I, n. spp.
- Cynips theophrastus* to *Andricus*, MAYR, p. 51, Marcellia iv; *C. maideni*, *longifolia*, cf. *Trichilogaster*, in *Chalcididæ*.
- C. tergestensis*, Trieste, KIEFFER, p. 370, *moreæ*, Morea, GRAEFFE, p. 372, Verh. Ges. Wien 1905, n. spp.

- Heptamerocera azteca*, Mexico, CAMERON, p. 387, Tr. Amer. ent. Soc. **xxi**, n. sp.
Hexamerocera kiefferi, Manila, ASHMEAD, p. 113, P. U. S. Mus. **xxix**; *H. philippinensis*, Manila, ASHMEAD, p. 4, Canad. Ent. 1905: n. spp.
Kleidotoma philippinensis, Manila, ASHMEAD, p. 399, P. U. S. Mus. **xxix**, n. sp.
Mesocynips insignis ♂, CAMERON, p. 94, J. Straits Asiat. Soc. **xliv**, n. sp.
Pentamerocera pacifica, Manila, ASHMEAD, p. 112, P. U. S. Mus. **xxix**, n. sp.
Pycnostigmus n. g. *Pycnostigmusinae* subfam. n., p. 20, *rostratus* n. sp., Cape Town, p. 21, CAMERON, Ann. Nat. Hist. (7) **xvi**.
Synergus flavus, N. America, KIEFFER, p. 45, Invert. pacif. i, n. sp.
Timaspis papaveris, France, KIEFFER, p. 200, Feuille Natural. **xxiv**, n. sp.

SESSILIVENTRES.

SIRICIDÆ, CEPHIDÆ, ORYSSIDÆ, LYDIDÆ.

[Cf. BRADLEY (168), CAMERON (267, 270), KONOW (880, 881).]

KONOW, in his *Chalastogastra*, deals with *Siricidæ* and commences *Tenthredinidæ*, Zeitschr. Hym. Dipt. v.

The genera of *Siricidæ* with lists of the species, KONOW, Gen. ins. fasc. **xxviii**, 14 pp., 1 pl.

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PAPILIONIDÆ.

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PIERIDÆ.

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[Of. HAENSCH (712), KAYE (828), WEEKS (1594).]

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- Calliploea mazares* subsp. n., FRUHSTORFER, p. 3, Soc. ent. xx.
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- Ceratinia polymnides*, Colombia, p. 148, *viola*, Amazona, p. 149, *pamina*, *nina*, *callunga*, Bolivia, p. 150, *ignoratu*, pl. iv, fig. 11, p. 151, Ama-

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- Hypoleria indecora*, Brit. Guiana, p. 177, *cajona*, Peru, *garleppi*, Amazona, p. 178, *riffarthi*, pl. v, fig. 14, Ecuador, p. 179, HAENSCH, Berlin. ent. Zeitschr. l.
- Hyposcada rezia*, pl. iv, fig. 4, *idina*, Amazona, HAENSCH, p. 167, t. c.
- Ithomia alienassa*, Colombia, p. 163, *eleonora*, Bolivia, p. 164, HAENSCH, t. c.; *I. gardneri*, pl. xl, p. 93, WEEKS, Illustr.
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- Mechanitis casabranca*, Brazil, p. 145, *eurydice*, p. 147, Peru, HAENSCH, t. c.
- Melinæa magnifica*, Peru, HAENSCH, p. 145, t. c.
- Napeogenes adulta*, *moles*, pl. iv, fig. 10, Brit. Guiana, p. 157, *olyrina*, pl. iv, fig. 5, Bolivia, *terastis*, Lower Amazons, p. 158, *deucalion*, Peru, *gracilis*, Bolivia, pl. v, fig. 2, *pteronymiensis*, pl. v, fig. 2, Colombia, *sodalis*, Peru, p. 160, HAENSCH, t. c.
- N. potaronus*, Brit. Guiana, KAYE, p. 120, Ent. Rec. xvii, n. sp.
- Olyris sticheli*, S. Peru, HAENSCH, p. 142, Berlin. ent. Zeitschr. l.
- Pseudoscada emyra*, pl. v, fig. 11, Bolivia, p. 176, *fallens*, Brazil, p. 177, HAENSCH, t. c.
- Pteronymia dispar*, *splendida*, pl. v, fig. 12, Colombia, p. 173, *olimba*, Peru, *tenuis*, *auricula*, pl. v, fig. 10, p. 174, Colombia, *derama*, fig. 8, *nepis-cada*, fig. 9, *yungava*, *denticulata*, p. 175, Peru and Bolivia, *evonia*, fig. 20, *medellina*, fig. 13, p. 176, Colombia, HAENSCH, t. c.
- Sais paraensis*, p. 161, *budia*, Amazona, *camariensis*, Brit. Guiana, pl. iv, fig. 12, HAENSCH, t. c.
- Scada majuscula*, Brit. Guiana, *amplificata*, Muzo, pl. v, fig. 1, p. 162, HAENSCH, t. c.
- Tithorea melanina*, *assimilis*, p. 143, *brunnea*, p. 144 Peru, HAENSCH, t. c.

ACRÆIDÆ and HELICONIIDÆ.

Monograph, recognising 2 genera, 87 good species and 4 doubtful; 49 of the species are divided into 214 subspecies, and these into named forms; thus *H. melpomene melpomene melpomenides* is the name of a form found in Dutch Guyana, and it belongs to the cohort *Melpomeniformes* of the section *Opisogynni* of the genus *Heliconius*. STICHEL & RIFFARTH, das Tierreich Lief. xxii.

Acræa zetes sidamona, p. 179, *A. penelopea gelonica*, *A. jodutta æthiopa*, p. 183, *A. circeis rhodina*, *A. lycoa equalis*, *A. ulciops schecana*, p. 184, subsp. n., ROTHSCILD & JORDAN, Nov. Zool. xii; *A. encedon* ab. n. *radiata*, AURIVILLIUS, p. 4, Arkiv Zool. ii, No. 12; *A. buxtoni* larva, JUNOD, p. 198, Bull. Soc. Neuchâtel xxvii.

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NYMPHALIDÆ.

[*Cf.* BARTEL (84), CLARK (321), DRUCE (456), FRUHSTORFER (620, 622), JUNOD (825), LINDEN (957), PETERSEN (1155), ROTHSCILD (1304), ROTHSCILD & JORDAN (1307), SCHÜLKE (1355), STICHEL (1450, 1451), WEEKS (1594).]

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Asterope anorgei, *garega*, etc., synonymy, BARTEL, p. 136, Nov. Zool. xii.

Atercia galene var. n. *dimorpha*, BARTEL, p. 138, t. c.

Cethosia cydippe lucina n. sp. (sic), Jobi, *biblis alceste* subsp. n., FRUHSTORFER, p. 36, *Ins. Børse* 1905.

Charaxes epijanius, variation, larva, pp. 7, 8, *C. kheili* var. *northcottii*, p. 9, AURIVILLIUS, Arkiv Zool. ii, No. 12; *C. nandina* ♀, *C. kansali baringana* subsp. n., ROTHSCILD, p. 78, Nov. Zool. xii; *C. zoolina*, pl. i, fig. 1, *C. neanthes*, p. 206, pl. i, fig. 2, hybrid, fig. 3, JUNOD, Bull. Soc. Neuchatel xxvii.

Cirrochroa tyche thilina subsp. n., FRUHSTORFER, p. 49, Soc. ent. xx.

Cymothoe amphicede characters, p. 148, *adelina-corsandra* variation, p. 149, BARTEL, Nov. Zool. xii.

Diestogyna fuscmarginata, p. 145, *aurivillii*, p. 146, Cameroons, BARTEL, t. c. n. spp.

Ergolis murina, Cameroons, BARTEL, p. 135, t. c. n. sp.

Euphadra themis ab. n. *reducta*, *E. gausape* ab. n. *extensa*, p. 141, *E. xypete* ab. n. *mirabilis*, p. 142, *E. lupercæ* ab. n. *luteofasciata*, *E. losinga* ab. n. *impunctata*, p. 143, BARTEL, t. c.

E. viridicærulea, p. 139, *adelica*, p. 140, *karschi*, p. 141, W. Africa, BARTEL, t. c.; *E. cooksoni*, Rhodesia, DRUCE, p. 550, Ann. Nat. Hist. (7) xvi : n. spp.

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Eurytela castelnaui ochus subsp. n., FRUHSTORFER, p. 49, Soc. ent. xx.

Hypolimnas dubius ab. n. *latepicta*, BARTEL, p. 135, Nov. Zool. xii.

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Myscelia streckeri, pl. i, fig. 3, p. 6, WEEKS, Illustr.

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- Perrhanæa cubana*, Cuba, DRUCE, p. 549, Ann. Nat. Hist. (7) xvi, n. sp.
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columella sumbana subsp. n., p. 314, pl. ix, fig. 6, FRUHSTORFER,
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 pl. ix, figs. 1, 2, *gnorima*, fig. 4, FRUHSTORFER, Iris Dresden xvii;
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MORPHIDÆ (and allies).

- [Cf. FRUHSTORFER (619, 623), JANET (814), STICHEL (1450, 1451), ROTHSCHILD & JORDAN (1307), WEEKS (1594).]
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pillata, FRUHSTORFER, p. 35, Soc. ent. xx.
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Zeuxidia nicevillei subsp. n., FRUHSTORFER, p. 33, t. c.

SATYRIDÆ.

[Cf. AUSTAUT (44), BARTEL (84), BLACHIER (122), CHAPMAN (302), DRUCE (457), GODMAN (671), GRINNELL (697), ROTHSCHILD & JORDAN (1306, 1307), THIEME (1490), WEEKS (1594).]

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- C. vaucheri* with var. *geminipuncta*, MAROCCO, BLACHIER, p. 213, Bull. Soc. ent. France 1905, n. sp.; *C. vaucheri*, pl. xix, figg. 1, 2, MEADE-WALDO, p. 377, Tr. ent. Soc. London 1905.
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- Cystineura aurantia*, pl. xlii, fig. 2, p. 97, t. c.
- Dædalma bronza*, pl. xxxv, p. 85, t. c.
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- Erebia euryale* var., SCHAWERDA, pp. 27, 29, Verh. Ges. Wien 1905; *E. flavofasciata*, variation in Engadine and Ticino, LOWE, pp. 38, 39, Ent. Rec. xvii; *E. stygne* and *evias* in Spain, larvæ, variation, CHAPMAN, pp. 9-31, Tr. ent. Soc. London 1905.
- Erebia palarica*, N. Spain, CHAPMAN, p. 13, pl. ii, t. c. n. sp.
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- Erycinidia* n. g. near *Hypocysta*, *gracilis* n. sp., New Guinea, ROTHSCHILD & JORDAN, p. 457, Nov. Zool. xii.
- Euptychia monohant*, pl. xxiii, fig. 1, p. 64, *therkelsoni*, fig. 2, p. 65, WEEKS, Illustr.; *E. luttela*, pl. xxxvii, fig. 1, p. 87, WEEKS, t. c.
- E. analis*, Amazons, pl. x, fig. 1, p. 185, *stigmatica*, Argentina, fig. 2, *penicillata*, figg. 3, 4, *scopulata*, fig. 5, Amazons, p. 186, *mimas*, fig. 6, *boliviana*, p. 7, *E. ? biocellata*, fig. 8, Bolivia, p. 187, GODMAN, Tr. ent. Soc. 1905, n. spp.
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- Ecuador, pl. iii, fig. 26, *auraria*, Peru, pl. ii, fig. 20, p. 64, *labulla* (= *perperna* Feld.) Bogotá, p. 65, *circumducta*, Mexico, p. 74, pl. iii, fig. 23, *manneja*, Colombia, p. 76, *amussis*, Cauca, p. 78, pl. iii, fig. 22, *silpa*, Bolivia, p. 80, pl. iii, fig. 29, *rahah*, Peru, pl. iii, fig. 31, p. 82, *muscosa*, Bolivia, p. 83, pl. ii, fig. 17, *jephtha*, pl. ii, fig. 18, Antioquia, p. 84, *antulla*, p. 86, pl. iii, fig. 28, *daulis*, pl. iii, fig. 24, p. 87, Peru, *simmas*, Bolivia, pl. iii, fig. 36, p. 90, *albutia*, Peru, pl. iii, fig. 21, p. 91, *cestia*, Colombia, pl. i, fig. 8, p. 94, *nebris*, pl. i, fig. 10, *empetrus*, pl. i, fig. 7, Merida, p. 98, *tyro*, Amazona, p. 100, *pheres*, Bolivia, pl. i, fig. 9, p. 101, *uncus*, Tucumán, p. 102, *asconia*, Ecuador, pl. ii, fig. 13, p. 104, *baccara*, Antioquia, pl. iii, fig. 35, p. 105, *ontella*, Ecuador, pl. ii, fig. 16, p. 106, *tucca*, Bolivia, pl. ii, fig. 15, *luperca*, Ecuador, p. 107, *eledonia*, Bolivia, pl. ii, fig. 14, p. 109, *quincedis*, Peru, pl. i, fig. 5, p. 110, *auristriga*, pl. ii, fig. 12, p. 111, *parma*, Colombia, p. 115, pl. i, fig. 2, *niphoessa*, pl. i, fig. 1, p. 116, *milvia*, pl. iii, fig. 34, p. 120, *amafania*, pl. i, fig. 4, p. 122, Peru, *pamphos*, Bolivia, p. 129, THIEME, Berlin. ent. Zeitschr. l, n. spp.
- Pierella chalybea*, Brazil, GODMAN, p. 85, Tr. ent. Soc. London 1905, n. sp.
- Pieridopsis* n. g. near *Hypocysta*, *virgo* n. sp., New Guinea, ROTHSCILD & JORDAN, p. 457, Nov. Zool. xii.
- Platyphthima* n. g. near *Hypocysta*, *ornata*, p. 458, *simplex*, *decolor*, p. 459, n. spp., New Guinea, and including *Hypocysta leucomelas* R., ROTHSCILD & JORDAN, t. c.
- Pseudonympha cassius* ab. n. *triocellata*, BARTEL, p. 133, Nov. Zool. xii.
- Satyrus mnizechi* var. n. *maroccana*, pl. xix, figg. 3, 4, MEADE-WALDO, p. 375, Tr. ent. Soc. London 1905; *S. actæa* var. *nevadensis*, RIBBE, p. 137, Soc. ent. xx.
- S. allantis*, Atlas, AUSTAUT, p. 25, Ent. Zeitschr. Guben xix; *S. behrii*, California, GRINNELL, p. 33, Ent. News Philad. xvi: n. spp.
- Steremnia* n. g. type *Pedaliodes polyxo*, *S. rugilas*, S. America, p. 137, *misella*, Peru, pl. iii, fig. 43, p. 138, n. spp., THIEME, Berlin. ent. Zeitschr. l.
- Taggetis puritana*, pl. xviii, p. 57, WEEKS, Illustr.
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ERYCINIDÆ, and allies (incl. *Elymnias*).

[Cf. ROTHSCILD & JORDAN (1907), WEEKS (1894).]

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- Amarynthis muscolor*, pl. vi, fig. 2, p. 35, WEEKS, Illustr.
- Aricoris aurigera*, pl. xi, fig. 1, p. 44, WEEKS, t. c.
- Dicalloneura leucomelas* (= *amabilis* ♀ olim), New Guinea, ROTHSCILD & JORDAN, Nov. Zool. xii, n. sp.
- Dynamine albidula*, pl. vi, fig. 1, p. 34, WEEKS, Illustr.
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- Lenonias virgulti*, life-history, GRUNDEL, p. 86, Ent. News Philad. xvi; *L. mazima*, pl. i, fig. 4, p. 3, WEEKS, Illustr.
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- C. cooksoni*, Rhodesia, DRUCE, p. 260, pl. xiii, fig. 10, Tr. ent. Soc. London 1905, n. sp.
- Epiphyas* n. g. type *Pamphila carolina*, DYAR, p. 132, J. N. York Ent. Soc. xiii.
- Gorgythion difficilis*, pl. xiv, fig. 2, p. 50, WEEKS, Illustr.
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- Hesperilla susula* Mab., to *Telesto*, SWINHOE, p. 614, t. c.
- Hesperopsis* n. g. type *Pholisora alpheus*, DYAR, p. 118, J. N. York Ent. Soc. xiii.
- Heteropterus morpheus* var. n. *radiata*, KOLISKO, p. 275, Verh. Ges. Wien 1905.
- Ilma* n. g. near *Erionotu*, *I. jovina* n. sp., Celebes, SWINHOE, p. 613, Ann. Nat. Hist. (7) xvi.
- Imene aphrodite*, Toli-toli, FRUHSTORFER, p. 141, Soc. ent. xx; *I. lysima*, Ké la, SWINHOE, p. 618, Ann. Nat. Hist. (7) xvi: n. spp.
- Mimas melie* ♂, SWINHOE, p. 615, t. c.
- Megathymus*, see *Castniida*.
- Nisionades tuges*, larval hairs, CHAPMAN, p. 281, Ent. Rec. xvii; *N. menuda*, pl. xlv, fig. 2, p. 101, WEEKS, Illustr.; *N. tihoneta*, pl. xxii, fig. 1, p. 62, WEEKS, t. c.
- Padraona tranquilla*, *tabla*, p. 616, *silativa*, New Guinea, *batchiana*, Batjan, p. 617, SWINHOE, Ann. Nat. Hist. (7) xvi.
- Pamphila roncilonis*, larva, JUNOD, p. 235, Bull. Soc. Neuchatel xxvii; *P. viridenez*, pl. xiv, fig. 3, p. 52, *errator*, pl. xv, fig. 1, *argentea*, fig. 2, p. 53, *cusillunia*, fig. 3, p. 54, *vesana*, pl. xvi, fig. 1, p. 55, *coroicana*, fig. 2, *serenus*, fig. 3, p. 56, WEEKS, Illustr.; *P. reedi*, pl. xxvi, fig. 1, p. 70, *alleni*, pl. xxvii, fig. 1, p. 71, *hurleyi*, fig. 2, p. 72, *leopardus*, pl. xxviii, fig. 1, p. 73, *taberi*, fig. 2, p. 74, *barbarz*, fig. 3, p. 75, *warreni*, pl. xxix, fig. 2, p. 77, *cuadrada*, fig. 3, p. 78, *idee*, pl. xxx, fig. 1, p. 79, *artici*, pl. xxx, fig. 2, p. 79, *planus*, pl. xxxi, fig. 1, p. 80, *milesi*, fig. 2, p. 81, *briquenydan*, pl. xxxii, fig. 1, p. 82, *septimanus*, fig. 2, p. 83, *allianca*, pl. xxxiii, fig. 1, p. 83, *coroiconensis*, fig. 2, p. 82, WEEKS, t. c.
- Parata alexis*, larval habits, GREEN, p. 157, Spolia Zeylan. iii.
- Paratrytone* n. g. type *Pamphila howardi*, DYAR, p. 136, J. N. York Ent. Soc. xiii.
- Preues californica*, pl. xxii, fig. 2, p. 63, WEEKS, Illustr.
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- P. delagoae* (Trim.), *Delagoa*, JUNOD, p. 233, pl. ii, fig. 3, Bull. Soc. Neuchatel xxvii, n. sp.
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- Telegonus tritonez*, pl. xxxiv, p. 85, WEEKS, Illustr.; *T. finitimus*, pl. xxxviii, fig. 2, p. 90, WEEKS, t. c.
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HETEROCERA.

Varr. n. of palaearctic *Heterocera*, SCHULTZ, pp. 115-122, *Nyt Mag. Naturv.* xliii [not recorded in detail here].

CASTNIIDÆ.

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M. polingi, Arizona, SKINNER, p. 232, Ent. News Philad. xvi: n. spp.
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SPHINGIDÆ.

[Cf. AUSTAUT (44), BETHUNE-BAKER (108), CANNAVIELLO (276), NAGANO (1082), PACKARD (1131), ROTHSCHILD (1304), SPEISER (1433).]

The *Sphingidæ* of Japan, NAGANO (1082).

Sphingidæ phylogeny, derivation from *Ceratocampidæ*, pp. 34-40; *Sys-sphingina* and *Protosphingina*, pp. 49, 50; PACKARD, Mem. Ac. Washington ix.

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Calasymbolus exocatus var. n. *pecosensis*, COCKERELL, p. 111, Entomologist 1905.

Hoplocnena brachycera Low. (as *Coemotriche*)=(*melanoleuca* Rothschn.), LOWER, p. 177, Tr. R. Soc. S. Austral. xxix.

Macroglossum micacea albibase, Solomon Ids., ROTHSCHILD, p. 79, Nov. Zool. xii, n. sp. (sic).

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Pterodonta n. g. for *Pterogon gorgoniades* H. S., AUSTAUT, p. 25, Ent. Zeitschr. Guben xxix.

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Sphinx sequoia, larva, WILLIAMS, p. 153, Ent. News Philad. xvi.

Theretra polistratus, pl. v, fig. 13, JORDAN, p. 512, Nov. Zool. xii.

SESIIDÆ.

[Cf. AURIVILLIUS (41), PÜNGELER (1221, 1223).]

Bemberia marginata, habits and life-history, LAWRENCE, pp. 117-119, Ent. News Philad. xvi.

Episannina n. g. p. 44, *chalybea* n. sp., W. Africa, p. 45, AURIVILLIUS, Arkiv Zool. ii, No. 12.

Melittia brevicornis, Cameroons, AURIVILLIUS, p. 43, t. c. n. sp.

Sesia flaviventris, larva and habits, LÜDERS, p. 382, Zeitschr. Insbiol. i.
S. setzi, Algeria, PÜNGELER, p. 129, Soc. ent. ix; *S. bohatschi*, p. 268,
tancræi, p. 269, Centr. Asia, PÜNGELER, Iris Dresden xvii; *S. ? xanthopyga*, W. Africa, AURIVILLIUS, p. 45, Arkiv Zool. ii, No. 12: n. spp.

BOMBYCES

(s. l., including CHALCOSIIDÆ, PSYCHIDÆ, HEPIALIDÆ, COSSIDÆ, AGARISTIDÆ, and various families of more or less doubtful position. *Uraniidæ* and *Epiplemidæ*, and *Cymatophoridæ*, see GEOMETRIDÆ; *Thyrididæ*, see PYRALIDÆ).*

[Cf. AURIVILLIUS (40, 41), BARNES (77), BETHUNE-BAKER (108), BLACHIER (122), COVERDALE (373), DOGNIN (439, 440, 441, 442), DRUCE (454, 455), DUDGEON (465), DYAR (470, 471, 472), DZIURZYNSKI (486, 487), GIBSON (653), HAMPSON (716, 719), HUDSON (794), JUNOD (825), KÜNCKEL (903-907), LOWER (981), MARSHALL (1011), PACKARD (1131), PERKINS (1151), PIEPERS & SNELLEN (1203), PÜNGELER (1221), ROTHSCCHILD (1304), ROTHSCCHILD & JORDAN (1307), SCHAUS (1329), SCHWANGART (1367), SEIFERT (1374), SILVESTRI (1399), SKINNER (1406), SWINHOE (1456-1462), VÉRITY (1540), WARREN & ROTHSCCHILD (1576).]

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- Eragia bocra*, Guiana, SCHAUS, p. 237, t. c. n. sp.
- Eriomastix* n. g. *Arctiidæ* near *Schistophleps*, *latus* n. sp., New Guinea, ROTHSCHILD & JORDAN, p. 469, Nov. Zool. xii.
- Eriostepta bacchans*, Guiana, SCHAUS, p. 212, P. U. S. Mus. xxix, n. sp.
- Estigmene unipuncta*, E. Africa, *internigralis*, Natal, HAMPSON, p. 447, Ann. Nat. Hist. (7) xv, n. spp.
- Eucereon baliura* to *Heliura*, HAMPSON, p. 430, t. c.; *E. metoides* n. n. for 1074 Hamp. Synt., HAMPSON, l. c.
- E. atrigutta*, p. 464, *leprotæ*, p. 465, Venezuela, DRUCE, Ann. Nat. Hist. (7) xv; *E. dorsipuncta*, Venezuela, p. 430, *ochrota*, Jamaica, p. 431, HAMPSON, Ann. Nat. Hist. (7) xv; *E. carabayana*, p. 191, *flavicincta*, *meruloides*, *lemoulti*, S. America, SCHAUS, p. 192, P. U. S. Mus. xxix; *E. formosum*, p. 9, *robustum*, p. 10, Peru, DOGNIN, Naturaliste 1905 : n. spp.
- Euchromia plagosa*, New Pomerania, p. 495, *shortlandica*, *salomonis*, *collaris*, Solomon Ids., p. 496, SWINHOE, Ann. Nat. Hist. (7) xv, n. spp.
- Euclæa mira* n. n. for *Parasa incisa* N. & D. nec Harv., DYAR, p. 367, P. U. S. Mus. xxix.

- E. cipior*, p. 367, *permodesta*, *pallicolor*, *cuspostriga*, p. 368, S. America, *dolliana*, Arizona, *bidiscalis*, Panama, p. 369, DYAR, t. c. n. spp.
- Eudoliche longa*, Guiana, SCHAUS, p. 198, P. U. S. Mus. xxix, n. sp.
- Eumaschane* n. g. *Notodontidæ*, *laura* n. sp., French Guiana, SCHAUS, p. 241, t. c.
- Euphobeton* n. g. *Limacodidæ*, *aquapennis*, *cupreitincta*, p. 387, *natadoides*, p. 388, n. spp., S. America, DYAR, P. U. S. Mus. xxix.
- Euproctis chrysorrhæa* ab. pl. ii, fig. 1, MÖBIUS, Iris Dresden xviii.
- E. macrostigma*, Ceylon, pl. d, fig. 29, *laniata*, figg. 10, 11, *fulvinigra*, fig. 4, *xanthosticta*, figg. 12, 13, India, HAMPSON, p. 200, J. Bombay Soc. xvi; *E. dirtea*, Borneo, SWINHOE, p. 151, Ann. Nat. Hist. (7) xv : n. spp.
- Euprosterna* n. g. near *Natada*, *elazana*, Mexico to Guiana, *pernambuconis*, p. 377, Brazil, n. spp., DYAR, P. U. S. Mus. xxix.
- Eupseudosoma aberrans*, Mexico, SCHAUS, p. 211, P. U. S. Mus. xxix, n. sp.
- Eurhodia* n. g. *Saturniidæ*, *gyra* n. sp., New Guinea, ROTHSCCHILD & JORDAN, p. 466, Nov. Zool. xii.
- Eurosa acanthocera*, Sangir, HAMPSON, p. 434, Ann. Nat. Hist. (7) xv, n. sp.
- Eurota xanthosoma*, Argentina, HAMPSON, p. 428, t. c. n. sp.
- Eurynola* n. g. *Nolina* type *mesoleuca* Lower, HAMPSON, p. 432, t. c.
- Eusemia vetula*, larva, pl. vii, fig. 6, p. 195, PIEPERS, Tijdschr. Ent. xlviii.
- Eutane nivea*, Pulo Laut, HAMPSON, p. 439, Ann. Nat. Hist. (7) xv, n. sp.
- Euseugapteryx* n. g. *Lithosiidæ*, DYAR, p. 175, *speciosa* n. sp., French Guiana, SCHAUS, p. 205, P. U. S. Mus. xxix.
- Evius albicriptus*, Guiana, SCHAUS, p. 213, t. c. n. sp.
- Farigia magniplaga*, p. 242, *fragilis*, p. 243, Guiana, SCHAUS, t. c. n. spp.
- Gastroplakeis schultzei*, W. Africa, AURIVILLIUS, pl. iv, fig. 5, p. 37, Arkiv Zool. ii, No. 12; *G. rufescens*, W. Africa, AURIVILLIUS, p. 314, pl. xvi, fig. 10, Tr. ent. Soc. London 1905 : n. spp.
- Geractia* n. g. *Arctiidæ*, p. 448, *poliotis* n. sp., Canaries, p. 449, HAMPSON, Ann. Nat. Hist. (7) xv.
- Glaucostola flavida*, *binotata*, Guiana, *metaxantha*, Costa Rica, SCHAUS, p. 221, P. U. S. Mus. xxix, n. spp.
- Ginaldia* n. g. *Notodontidæ*, *davidsoni* n. sp., French Guiana, SCHAUS, p. 282, t. c.
- Givira triplex*, Guiana, SCHAUS, p. 342, t. c.; *G. chielin*, p. 149, *moche*, p. 150, Peru, DOGNIN, Ann. Soc. ent. Belgique 1905 : n. spp.
- Gonometa postica* ♂ ♀, JUNOD, pl. iii, Bull. Soc. Neuchatel xxvii.
- G. regia*, Uganda, AURIVILLIUS, p. 313, pl. xvi, fig. 3, Tr. ent. Soc. London 1905, n. sp.
- Gois* n. g. *Megalopygidæ*, DYAR, p. 177, *nigrescens* n. sp., Brit. Guiana, SCHAUS, p. 338, P. U. S. Mus. xxix.
- Gonimbrasia nictitans*, larva, AURIVILLIUS, p. 30, pl. ii, figg. 3, 4, Arkiv Zool. ii, No. 12.
- Gopha niveigutta*, Guiana, SCHAUS, p. 245, P. U. S. Mus. xxix, n. sp.
- Gymnelia pitthea* and *cocho* to *Pseudosphenopectera*, *pitthea* being ♂ of *P. basalis*, HAMPSON, p. 427, Ann. Nat. Hist. (7) xv.
- G. tarsipuncta*, Brazil, SCHAUS, p. 184, P. U. S. Mus. xxix, n. sp.
- Halindota discalis* Walk. = (*Azatrephe paradisea*), HAMPSON, p. 430, Ann. Nat. Hist. (7) xv.
- H. racema*, *maroniensis*, Guiana, p. 223, *apicepunctata*, Peru, p. 224, SCHAUS, P. U. S. Mus. xxix, n. spp.
- Hapigia repandens*, Mexico and S. America, p. 291, *gaudens*, *annulata*, *aymaru*, Guiana, p. 292, SCHAUS, t. c. n. spp.
- Haplopacha* n. g. near *Chondrostega*, p. 323, *cinerea* n. sp., Rhodesia, p. 324, AURIVILLIUS, Tr. ent. Soc. London 1905.
- Heliura phacosoma*, *zonata*, Venezuela, DRUCE, p. 464, Ann. Nat. Hist. (7)

- xv; *H. dolens*, *umbrinacula*, S. America, SCHAU, p. 191, P. U. S. Mus. xxix : n. spp.
- Hemerocampa leucostigma*, no. of eggs, GIRAULT, p. 167, Ent. News Philad. xvi.
- Hemiceras affinis*, Peru, *buckleyi*, Ecuador, DRUCE, p. 542, Ann. Nat. Hist. (7) xv; *H. indigna*, *undilinea*, *jejuna*, p. 283, *satelles*, *beata*, *gortynoides*, p. 284, *crassa*, *commentica*, p. 285, *longipennis*, *flava*, *maronita*, p. 286, *stupidia*, *cayennensis*, *flavescens*, p. 287, *laurentina*, *manora*, p. 288, *metallescens*, *conspirata*, S. America, *micans*, Mexico, p. 289, *nebulosa*, *nigriplaga*, *muscosa*, p. 290, *poulsoni*, p. 291, S. America, SCHAU, P. U. S. Mus. xxix : n. spp.
- Hemipecten* n. g. *Cossida*, DYAR, p. 177, *ecparilis*, *acutipennis*, *cossuloides*, p. 340, *niveogrisea*, *rotundopuncta*, *marmorata*, p. 341, French Guiana, n. spp., SCHAU, P. U. S. Mus. xxix.
- Heniocha terpsichore*, larva, pl. ii, fig. 1, AURIVILLIUS, p. 34, Arkiv Zool. ii.
- Heorta carema*, Guiana, SCHAU, p. 233, P. U. S. Mus. xxix, n. sp.
- Hepaliopsis* n. g. type *Semyra agemytha* Dr., DYAR, p. 374, P. U. S. Mus. xxix.
- Hepialiscus algeriensis* ab. n. *joannisi*, LUCAS, p. 53, pl. v, fig. 1, Ann. Soc. ent. France 1905.
- Hepialus pyrenaicus*, early stages, XAMBEU, pp. 14-16, Naturaliste 1905; *H. sequiolus*, larva, WILLIAMS, pp. 19, 20, Ent. News Philad. xvi; *H. sequiolus*, larval habits and life-history, WILLIAMS, pp. 283-287, t. c.
- Herea xanthogaster* = (*Desmidocnemis prittwitsi*), HAMPSON, p. 429, Ann. Nat. Hist. (7) xv.
- Herpa meeki* = (*Pidorus ericydes* Swinh.), ROTHSCILD & JORDAN, p. 475, Nov. Zool. xii.
- Herpolania* n. g. *Chalcosiidae*, *augarra* n. sp., New Guinea, and incl. *C. albomedius* Rothschn., iid. t. c.
- Heterocampa wymola*, Arizona, BARNES, p. 214, Canad. Ent. 1905; *H. lama*, *gravia*, p. 249, *infunda*, *habilis*, p. 250, *bactrea*, *echina*, *delira*, p. 251, *foliata*, *cariosa*, p. 252, *marginalis*, *emula*, *notabilis*, p. 253, *otiosa*, *patricia*, *caluna*, p. 254, *poulsoni*, *subalbida*, p. 255, SCHAU, P. U. S. Mus. xxix; *H. multilineata*, Tucuman, DOGNIN, p. 148, Ann. Soc. ent. Belgique 1905 : n. spp.
- Heterogynis*, larval habits, matricivorous, CHAPMAN, pp. 177-184, Tr. ent. Soc. London 1905.
- Heteropan alberti*, New Guinea, ROTHSCILD & JORDAN, p. 475, Nov. Zool. xii, n. sp.
- Heteropsyche* n. g. *Epipyropidae*, p. 81, *pæcilochroma*, *melanochroma*, p. 82, *micromorpha*, *dyscrita*, *stenomorpha*, p. 83, n. spp., Australia, PERKINS, Bull. exp. Stat. Hawaii i.
- Hippia undulata*, Colombia, DRUCE, p. 540, Ann. Nat. Hist. (7) xv; *H. salandera*, Guiana, SCHAU, p. 243, P. U. S. Mus. xxix : n. spp.
- Homoneuronia* n. g. *Syntomidae*, DYAR, p. 174, *modesta* n. sp., Guiana, SCHAU, p. 188, P. U. S. Mus. xxix.
- Hyaleucerea leucosticta*, Venezuela, DRUCE, p. 466, Ann. Nat. Hist. (7) xv; *H. phreosoma*, Paraguay, HAMPSON, p. 431, Ann. Nat. Hist. (7) xv : n. spp.
- Hyalonia* n. n. for *Desmidocnemis*, HAMPSON, p. 429, t. c.
- Hydrias gorda*, *congruens*, Peru, *canescens*, Venezuela, DOGNIN, p. 120, Naturaliste 1905, n. spp.
- Hypermerpha maroniensis*, Guiana, SCHAU, p. 199, P. U. S. Mus. xxix, n. sp.
- Hyperthermus ruberrima*, p. 221, *coccinata*, p. 222, Guiana, SCHAU, t. c. n. spp.
- Hypidalia sanguirena*, Guiana, SCHAU, p. 220, t. c. n. sp.

- Hypocladia elongata*, Venezuela, *albipuncta*, Peru, DRUCE, p. 461, Ann. Nat. Hist. (2) xv, n. spp.
- Hypomolis minca*, Mexico, SCHAUS, p. 227, P. U. S. Mus. xxix, n. sp.
- Hyponerita interna*, *lucens*, *furva*, p. 228, *carinaria*, *declivis*, *incerta*, p. 229, Guiana, SCHAUS, t. c. n. spp.
- Hypoptia inguromorpha*, *crassiplaga*, *triareolata*, p. 343, French Guiana, SCHAUS, t. c. n. spp.
- Hypsa donatana*, pl. d, fig. 20, p. 201, HAMPSON, J. Bombay Soc. xvi.
- Ichoria chrostomides*, Guiana, SCHAUS, p. 187, P. U. S. Mus. xxix, n. sp.
- Idalus rubens*, *laurentia*, p. 207, *neja*, *flavoplaga*, *albicoxa*, p. 208, *catenata*, p. 209, S. America, SCHAUS, t. c. n. spp.
- Idonauton nigribasis*, India, pl. d, fig. 31, p. 196, HAMPSON, J. Bombay Soc. xvi, n. sp.
- Ilema henleyi*, Sudan, WARREN & ROTHSCILD, p. 23, pl. iv, fig. 31, Nov. Zool. xii; *I. fuscifrons*, New Guinea, HAMPSON, p. 433, Ann. Nat. Hist. (7) xv : n. spp.
- Illiberis pruni*, Japan, DYAR, p. 954, P. U. S. Mus. xxviii, n. sp.
- Illice faustinula*, early stages, synonymy, WILLIAMS, p. 257, Ent. News Philad. xvi.
- I. abala*, *subrubra*, *pygmaea*, *rubricollis*, French Guiana, SCHAUS, p. 200, P. U. S. Mus. xxix; *I. triplaga*, *roseiceps*, Paraguay, *rhodocraspis*, Argentina, HAMPSON, p. 436, Ann. Nat. Hist. (7) xv : n. spp.
- Iseanthrene fulvipuncta*, Panama, HAMPSON, p. 427, t. c. n. sp.
- Isearta pieridoides*, sexes and variation, p. 148, *I. binghami* Butl. = (*cyaneescens* Hamps.), *I. curiosa* Swinh. = (*aspasia* Snell.) p. 149, SWINHOE, Ann. Nat. Hist. (7) xvi.
- Ischnocampa deceptura*, *flavicosta*, *barbata*, Peru, DRUCE, p. 466, Ann. Nat. Hist. (7) xv, n. spp.
- Ixylasia pyroproctis*, Venezuela, DRUCE, p. 462, Ann. Nat. Hist. (7) xv; *I. semivitreata*, Brazil, HAMPSON, p. 429, Ann. Nat. Hist. (7) xv : n. spp.
- Kaseria* n. g. *Notodontide*, *pallida* n. sp., French Guiana, SCHAUS, p. 283, P. U. S. Mus. xxix.
- Lacosoma otalla*, Guiana, SCHAUS, p. 330, t. c. n. sp.
- Lælia suffusa*, *testacea*, larvæ, HAMPSON, p. 198, J. Bombay Soc. xvi.
- L. euproctina*, W. Africa, AURIVILLIUS, p. 26, Arkiv Zool. ii, No. 12, n. sp.
- Lasiocampa josua* var. n. *vaucheri*, BLACHIER, p. 52, Bull. Soc. ent. France 1905; *L. quercus* ab. n. *paradoxa*, FRINGS, p. 89, Soc. ent. xx; but t. c. p. 99 is *olivaceo-fasciata* Cock.
- Lebedodes?* *schultzei*, Niger, AURIVILLIUS, p. 41, Arkiv Zool. ii, No. 12, n. sp.
- Lechriolepis pulchra*, Centr. Africa, AURIVILLIUS, p. 318, pl. xvi, f. 12, Tr. ent. Soc. London 1905, n. sp.
- Lenodora hyalomelana*, Madras, pl. d, f. 9, p. 197, HAMPSON, J. Bombay Soc. xvi, n. sp.
- Lentagena* n. g. for *Eugivira nudria* Schaus, DYAR, p. 178, P. U. S. Mus. xxix.
- Lepusta maonica*, *maltha*, p. 239, *viridis*, p. 240, Guiana, SCHAUS, P. U. S. Mus. xxix, n. spp.
- Leucotomensis albigutta*, p. 185, *thoracica*, p. 186, Guiana, SCHAUS, t. c. n. spp.
- Limacodes oropeso*, Arizona, BARNES, p. 216, Canad. Ent. 1905, n. sp.
- Limacodide*; table of genera of New World, DYAR, p. 359, P. U. S. Mus. xxix.
- Liparis chrysorrhea* and *Thabor* oaks at Rennes, HOULBERT, Bull. Soc. Sci. Med. Ouest France xiv, pp. 113-118.
- Lobesia smithi*, Colombia, DRUCE, p. 542, Ann. Nat. Hist. (7) xv; *L. minor*, Guiana, SCHAUS, p. 274, P. U. S. Mus. xxix : n. spp.

- Lasopilebia cinctata*, Venezuela, HAMPSON, p. 428, Ann. Nat. Hist. (7) xv;
L. geminata, French Guiana, SCHAUS, p. 185, P. U. S. Mus. xxix:
 n. spp.
- Lusura plorabilis*, Guiana, SCHAUS, p. 275, t. c. n. sp.
- Lycomorhodes epatra*, Guiana, SCHAUS, p. 202, t. c. n. sp.
- Lymantria moesta*, pl. d, f. 22, HAMPSON, p. 199, J. Bombay Soc. xvi.
- Macrobrochis flavicincta*, pl. d, f. 21, Cachar, HAMPSON, p. 202, t. c. n. sp.
- Macrocneme maroniensis*, Guiana, SCHAUS, p. 188, P. U. S. Mus. xxix, n. sp.
- Macropectra ceylonica*, Ceylon, *inconspicua*, Bombay, HAMPSON, p. 196,
 J. Bombay Soc. xvi, n. spp.
- Macrothylacia rubi* subsp. n. *digramma*, pl. xix, f. 10, MEADE-WALDO,
 p. 390, Tr. ent. Soc. London 1905.
- Manas maculifascia*, larva, pl. vi, f. 1, p. 181, PIEPERS, Tijdschr. Ent.
 xlvii.
- M. fosteri*, Paraguay, HAMPSON, p. 446, Ann. Nat. Hist. (7) xv, n. sp.
- Mahasena destructor*, Sikkim, DUDGEON, p. 401, J. Bombay Soc. xvi, n. sp.
- Malocampa paramaribena*, p. 255, *piratica*, *maroniensis*, p. 256, *amanthis*,
gastriva, *eugenia*, p. 257, *sorex*, *tetrica*, p. 258, *gemonia*, *spurca*,
broma, p. 259, *mayeri*, p. 260, Guiana, SCHAUS, P. U. S. Mus. xxix,
 n. spp.
- Malupa* n. g. *Notodontidae*, p. 245, *elongata* n. sp., Brit. Guiana, p. 246,
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- Manoba* Walk. = (*Stictane*), *M. implens* = (*S. juncitilinea*), HAMPSON, p. 434,
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- Marthula grisea*, p. 235, *castrensis*, *hirsuta*, p. 236, *minna*, p. 237,
 S. America, SCHAUS, P. U. S. Mus. xxix, n. spp.
- Maschane frondea*, Guiana, SCHAUS, p. 268, t. c. n. sp.
- Megalopygidae*; synopsis of genera, SCHAUS, p. 333, t. c.
- Melanothrix fumosa*, Borneo, SWINHOE, p. 142, Ann. Nat. Hist. (7) xvi,
 n. sp.
- Melastota* n. g. *Lithosiane*, type *nigrisquamata* Swinh., HAMPSON, p. 439,
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- Melese castrena* Brazil, *chiriquensis*, Panama, SCHAUS, p. 220, P. U. S. Mus.
 xxix, n. spp.
- Meragisa arida*, *arenosa*, p. 266, *submarginata*, p. 267, S. America, SCHAUS,
 t. c.; *M. garlepi*, Bolivia, *semifulva*, Peru, DRUCE, p. 541, Ann. Nat.
 Hist. (7) xv: n. spp.
- Mesocia lorna*, p. 336, *terminata*, p. 337, Guiana, SCHAUS, P. U. S. Mus.
 xxix, n. spp.
- Mesothen caeruleicorporis*, Bolivia, *nanum*, Surinam, SCHAUS, p. 185, t. c.;
M. endoleuca, Venezuela, *ockendeni*, Peru, DRUCE, p. 460, Ann. Nat.
 Hist. (7) xv: n. spp.
- Metabolosia invaria*, Guiana, SCHAUS, p. 201, P. U. S. Mus. xxix, n. sp.
- Metacroece* n. g. *Syntomidae*, DYAR, p. 173, *postflava* n. sp., Brazil, SCHAUS,
 p. 193, t. c.
- Metanastris lemontii*, Guiana, SCHAUS, p. 316, t. c. n. sp.
- Metarbela triguttata*, W. Africa, AURIVILLIUS, p. 41, Arkiv Zool. ii, No. 12,
 n. sp.
- Metarctia hamatricha*, Abyssinia, HAMPSON, p. 426, Ann. Nat. Hist. (7)
 xv, n. sp.
- Metopoceras gauckleri*, Jordan Valley, PÜNGELER, p. 267, Iris Dresden xvii,
 n. sp.
- Metoxanthiu threnodes*, Venezuela, DRUCE, p. 467, Ann. Nat. Hist. (7) xv,
 n. sp.
- Metragia rubicolor*, Nicaragua, DYAR, p. 370, P. U. S. Mus. xxix, n. sp.
- Miacora* n. g. *Cossidae*, type *Cossus tropicalis* Schaub, DYAR, p. 177, t. c.
- Microhyle* n. g. *Lithosiane*, type *fadella* Mab., HAMPSON, p. 437, Ann.
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- Mimopacha tripunctata*, Niger, AURIVILLIUS, p. 36, pl. iii, f. 8, Arkiv Zool. ii, No. 12, n. sp.
- Minacraga* n. g. *Dalcerida*, DYAR, p. 176, *disconitens* n. sp., French Guiana, SCHAUS, p. 331, P. U. S. Mus. xxix.
- Minonoa* n. g. *Dalcerida*, DYAR, p. 176, *perbella* n. sp., Petropolis, SCHAUS, p. 332, t. c.
- Mireza venosa*, San Salvador, DYAR, p. 372, t. c. n. sp.
- Monda heylaertsi*, Delagoa, JUNOD, p. 249, pl. iv, f. 4, Bull. Soc. Neuchatel xxvii, n. sp.
- Napata euchloa*, Jamaica, HAMPSON, p. 429, Ann. Nat. Hist. (7) xv, n. sp.
- Natada deba, debella, dognini*, p. 379, *bergii, increascens, sufficiens, incandescens*, p. 380, *perpectinata, subpectinata*, p. 381, S. America, DYAR, P. U. S. Mus. xxix, n. spp.
- Navarcastes* n. g. *Notodontida, limnatis* n. sp., French Guiana, SCHAUS, p. 280, P. U. S. Mus. xxix.
- Neacerea pyrozona, rhodocrypta, discalis, flaviceps*, Venezuela, DRUCE, p. 463, Ann. Nat. Hist. (7) xv, n. spp.
- Nèressa* n. g. *Syntomida* type *sagada* Semp., HAMPSON, p. 426, Ann. Nat. Hist. (7) xv.
- Neaxia gnosia*, p. 211, *bella*, p. 212, Guiana, SCHAUS, P. U. S. Mus. xxix, n. sp.
- Neoscaptia albata*, p. 470, *æqualis, leucodera*, p. 471, *pacila*, p. 472, New Guinea, ROTHSCCHILD & JORDAN, Nov. Zool. xii, n. spp.
- Neritos onyles, pamae, sexes*, HAMPSON, p. 443, Ann. Nat. Hist. (7) xv.
- N. carmen, coccinea*, p. 224, *gaudialis, tremula, maculosa*, p. 225, *chrysozona, prophæa, sanguidorsia*, p. 226, French Guiana, SCHAUS, P. U. S. Mus. xxix; *N. macrosticta* (=1543 Cat. Lep. Phal.) p. 443, *discobola*, Venezuela, *leucoplaga, holophæa*, p. 444, *phæoplaga, albicollis, steniptera*, p. 445, *cyclopera*, p. 446, Guiana, HAMPSON, Ann. Nat. Hist. (7) xv : n. spp.
- Nesebra* n. g. *Notodontida, norema* n. sp., French Guiana, SCHAUS, p. 275, P. U. S. Mus. xxix.
- Nodoranu bellicula*, Guiana, SCHAUS, p. 201, t. c. n. sp.
- Nola bicincta*, Cape Colony, HAMPSON, p. 432, Ann. Nat. Hist. (7) xv; *N. brachystria*, India, pl. d, f. 16, p. 435, HAMPSON, J. Bombay Soc. xvi; *N. mesographa*, Guiana, SCHAUS, p. 195, P. U. S. Mus. xxix : n. spp.
- Notoplusia eugenia*, p. 248, *sabrena*, p. 249, Guiana, SCHAUS, t. c. n. spp.
- Nystuleu porgana, sequora*, p. 232, *marona*, Guiana, p. 233, SCHAUS, t. c. n. spp.
- Ochrostigma melagona* ab. n. *melunochroa*, SCHULTZ, p. 91, Jahresber. Wien. ent. Ver. 1904.
- Ocinaropsis* n. g. *Lasiocampida, obscura* n. sp., Natal, AURIVILLIUS, p. 317, Tr. ent. Soc. London 1905.
- Ocnogyna baetica*, life-history, POWELL, pp. 237-240, pl. ix, Ent. Rec. xvii; *O. baetica*, CHAPMAN, t. c. p. 265, pl. x; *O. baeticum*, natural history, ravages, SILVESTRI, Bull. Scuola Agric. Portici (2) No. 10, 12 pp.
- Odonestis fossa*, pl. d, f. 14, HAMPSON, p. 198, J. Bombay Soc. xvi.
- Odontocheilopteryx griseuta*, Sudan, WARREN, p. 22, Nov. Zool. xii; *O. maculata*, W. Africa, AURIVILLIUS, p. 36, pl. iii, f. 5, Arkiv Zool. ii, No. 12 : n. spp.
- Odontosis* ? *viridifusca*, Brit. Guiana, SCHAUS, p. 278, P. U. S. Mus. xxix, n. sp.
- Odozana unica*, Mexico, SCHAUS, p. 199, t. c. n. sp.
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- Rhesala tenuilinea*, Sumatra, SWINHOE, p. 623, Ann. Nat. Hist. (7) xvi, n. sp.
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- Rivula niveipuncta*, Khasia Hills, SWINHOE, p. 154, Ann. Nat. Hist. (7) xv; *R. magniplaga*, Khasia Hills, SWINHOE, p. 622, op. cit. xvi: n. spp.
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- Scoliopteryx libatrix*, as a cave-insect, GADEAU, p. 54, Bull. Soc. ent. France 1905.
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- Scriptania* n. g. type *Agrotis michaelsoni* Staud., *S. sysygia*, Patagonia, n. sp., pl. 91, f. 11, p. 464, HAMPSON, t. c.
- Sesamia albicostata*, Victoria, LOWER, p. 175, Tr. R. Soc. S. Austral. xxix, n. sp.
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- Simplicia albisinuata*, Arizona, SMITH, p. 71, Canad. Ent. 1905, n. sp.
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- Stictoptera crinopsis*, Ashanti, p. 533, *hemithyris*, India, *phæobasis*, Perak, p. 534, *leucostriga*, Penang, *ferruginea*, Borneo, p. 535, *anamia*, Solomon Islds., *hypenistis*, Burma, p. 536, HAMPSON, Ann. Nat. Hist. (7) xvi, n. spp.
- Stiria aliaga*, Arizona, BARNES, p. 213, Canad. Ent. 1905, n. sp.
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- Synthimia exsiccata*, Sudan, WARREN & ROTHSCCHILD, p. 25, pl. iv, figg. 19, 30, Nov. Zool. xii, n. sp.
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- Thyrestra* n. g. for *Euplexia hyalophora*, HAMPSON, p. 6, Cat. Lep. Phalænæ v.

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Zethes subapicalis, Cachar, SWINHOE, p. 154, Ann. Nat. Hist. (7) xvi; *Z. pallidiplaga*, Solomon Islds., p. 160, *enigmatica*, Khasia Hills, p. 161, SWINHOE, op. cit. xv: n. spp.

GEOMETRIDÆ.

- [Cf. BASTELBERGER (80-83), BETHUNE-BAKER (106), DRAUDT (450), DYAR (470, 474, 476), FUCHS (624), HUDSON (794), JORDAN (823), KATE (828), LONGSTAFF (974), LOWER (981), MEYRICK (1041), PEARSALE (1142), PETERSEN (1155), PHILPOTT (1167), PROUT (1217, 1218), PUNGELER (1224), ROTHCHILD & JORDAN (1307), SWINHOE (1459, 1460, 1462), THIERRY-MIEG (1493), TURATI (1506), VÁZQUEZ (1535), WARREN (1569-1575), WARREN & ROTHCHILD (1576).]

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- Actenochroma ochreipicta*, Khasia Hills, SWINHOE, p. 166, Ann. Nat. Hist. (7) xv, n. sp.
- Æchropteryx tetragonata* ab. n. *solitaria*, WARREN, p. 368, Nov. Zool. xii.
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- Anemplocia* n. g. *Heterusiina*, *flammifera* n. sp., Colombia, WARREN, p. 344, t. c.
- Angerona prunaria* abb., pl. ii, figg. 10, 11, MÖBIUS, Iris Dresden xviii.
- A. simulatrix*, Cayenne, THIERRY-MIEG, p. 193, Naturaliste 1905, n. sp.
- Anisodes subpallida* ab. n. *figurata*, WARREN, p. 320, Nov. Zool. xii.
- A. ruficosta*, Brit. Guiana, WARREN, p. 45, t. c. n. sp.
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- Anisoperas albinorsa*, Peru, WARREN, p. 65, t. c.; *A. bimaculata*, Bolivia, WARREN, p. 366, t. c. n. sp.
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- Aperusia* n. g. *punctistriata* n. sp., Peru, WARREN, p. 328, Nov. Zool. xii.
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Apocheima fuliginosa, Natal, WARREN, p. 36, t. c. n. sp.
Argyrotome muricolor, Peru, WARREN, p. 346 t. c. n. sp.
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Ascotis margarita = (*Blepharoctenucha albescent* Warr.), WARREN, p. 432, t. c.
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Azelina, *poaphilaria* is type, WARREN, p. 367, t. c.
A. fulvata, Sta. Martha, WARREN, p. 65, t. c.; *A. geminipuncta*, Peru, WARREN, p. 367, t. c. : n. spp.
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Bronchelia consimilis, Mexico, *plumbilinea*, p. 62, *semicompleta*, p. 63, Peru, WARREN, t. c. n. spp.
Bryoptera discata ab. n. *cretata*, WARREN, p. 353, t. c.
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Bulonga trilineata, Borneo, BASTELBERGER, p. 5, Ent. Zeitschr. Guben xix, n. sp.
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Callipia balteata, Peru, WARREN, p. 72, t. c. n. sp.
Cambogia trillista, Peru, WARREN, p. 51, t. c. n. sp.
Campyloma aurata, Bogota, WARREN, p. 312, t. c. n. sp.
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Cartellodes olivaria, Peru, WARREN, p. 367, t. c. n. sp.
Catoria lucidata, Solomon Islds., WARREN, p. 15, t. c.; *C. subalbata*, Sumatra, WARREN, p. 432, t. c. : n. spp.
Certima strigifera, Peru, WARREN, p. 66, t. c.; *C. leucuniata*, Peru, WARREN, p. 368, t. c. n. sp.
Cerynia cupreata, p. 52, *pamphilata*, p. 53, Peru, WARREN, t. c. n. spp.
Chiasmia maculilinea, Celebes, *minuta*, Borneo, WARREN, p. 433, t. c. n. spp.
Chlorochroma quietu Luc. (as *Iodis*) = (*Cenochloru felix* Warr.), WARREN, p. 422, t. c.
C. imparicornis, Queensland, WARREN, p. 422, t. c. n. sp.
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Chogada alienarius ab. n. *nigrofasciata*, *C. decarius* ab. n. *nigristigma*, WARREN, p. 432, t. c.
C. funesta, Natal, WARREN, p. 398, t. c. n. sp.
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Chryschloroma nubecula, New Guinea, WARREN, p. 421, t. c. n. sp.
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- Cirrhoreuma* n. g. *Hydriomeninae*, *pallidimargo* n. sp., Peru, WARREN, p. 329, t. c.
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- Calura dissocia*, Paraguay, WARREN, p. 41, t. c. n. sp.
- Cenocalpe custodiata* Guen. = (*centrostrigaria* Wall.), WARREN, p. 442, t. c.
- C. euboliata*, p. 329, *ignifera*, *nitida*, p. 330, Peru, WARREN, t. c. n. spp.
- Colpodonta* n. g. type *Azelina prinienta* Dogn. (= *phyllodontaria* Warr.), WARREN, p. 369, t. c.
- Cophocerotis casta*, Peru, WARREN, p. 341, t. c. n. sp.
- Cosymbia maderensis* ab. n. *irrufata*, WARREN, p. 441, t. c.
- C. marcida*, Sudan, WARREN & ROTHCHILD, p. 27, pl. iv, fig. 28, t. c.; *C. nitidata*, Natal, WARREN, p. 387, t. c. n. spp.
- Craspedia immaculata*, Ivory Coast, WARREN, p. 388, t. c. n. sp.
- Craspedosis albistriata*, Batchian, WARREN, p. 431, t. c.; *C. cyanea*, *desmiata*, New Guinea, ROTHCHILD & JORDAN, p. 468, Nov. Zool. xii : n. spp.
- Crocallis elinguaris* abb., pl. ii, fig. 9, MÖBIUS, Iris Dresden xviii.
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- Crypsityla subrosea*, Colombia, WARREN, p. 321, t. c. n. sp.
- Ctenistochlora* n. g. *Deiliniinae* for *Aplochloa fallax*, WARREN, p. 428, t. c.
- Cyllopoda latiflava*, Colombia, *tenuis*, Parana, WARREN, p. 312, t. c. n. spp.
- Cymatophora subcrinita*, Peru, WARREN, p. 63, t. c.; *C. limbata*, *muscutincta*, Peru, WARREN, p. 354, t. c. n. spp.
- Decetia uniformis*, Solomon Islds., WARREN, p. 8, t. c. n. sp.
- Deinoptila peninsula* Dogn., ♀, WARREN, p. 331, t. c.
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Emmiltis binivata, Angola, p. 388, *cervinata*, W. Africa, *thakiata*, Natal, p. 389, WARREN, Nov. Zool. xii; *E. elyra*, Kashmir, SWINHOE, p. 628, Ann. Nat. Hist. (7) xvi; *E. placida*, *plenistigma*, Solomon Ids., WARREN, p. 423, t. c.; *E. malepicta*, Peru, WARREN, p. 46, t. c.; *E. inquinatula*, Peru, p. 321, *ochratipennis*, Venezuela, p. 322, WARREN, t. c. n. spp.
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Ephemerophila penumbra, Sierra Leone, WARREN, p. 395, t. c. n. sp.
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Euclynia ochrivittata, Bolivia, WARREN, p. 369, Nov. Zool. xii, n. sp.
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Eumelea albimacula WART. to *Desmobathra*, WARREN, p. 419, t. c.
E. infulata, Solomon Ids., p. 417, *phanissa*, Obi, p. 418, WARREN, t. c. n. spp.
Eumera regina, early stages, REBEL, p. 398, Verh. Ges. Wien 1905.
Euomæa ochrea, Natal, WARREN, p. 409, Nov. Zool. xii, n. sp.
Eupileta n. g. *Fidoninæ hirsuta* n. sp., Tijuco, WARREN, p. 362, t. c.
Eupithecia rigida Swinh. to *Eucymatoge*, WARREN, p. 425, t. c.; *E. interruptofasciata*, larva, FLETCHER & GIBSON, p. 262, Canad. Ent. 1905; *E. sinuaria*, larva, DRAUDT, p. 269, pl. v, figg. 4-9, Iris Dresden xvii.
Eurythecodes fimosus, Sierra Leone, WARREN, p. 38, Nov. Zool. xii, n. sp.
Euschema malayaria var. n. *paupera*, *E. remota* var. n. *auctata*, *albimacula*, THIERRY-MIEG, p. 181, Naturaliste 1905. Cf. also *Pareuschema*.
E. auriplena, Waigiou, THIERRY-MIEG, p. 181, t. c. n. sp.
Eutomopepla albicollaris, Peru, WARREN, p. 369, Nov. Zool. xii, n. sp.
Exetis unsorgei, Niger Coast, WARREN, p. 409, t. c. n. sp.
Gathynia biocellata, Peru, WARREN, p. 308, t. c. n. sp.
Geitonia n. g. near *Anisoperas*, *gracilinea* n. sp., Chiriqui, WARREN, p. 370, t. c.

- Gelasma clemens*, Ecuador, WARREN, p. 317, t. c. n. sp.
Geometra papilionaria varr. and larva, BURROWS, pp. 200-205, 221-227, pl. viii, Ent. Rec. xvii.
Gonanticlea deleta, New Guinea, WARREN, p. 11, Nov. Zool. xii, n. sp.
Gonodela subcretata, Uganda, WARREN, p. 37, t. c.; *G. apicispallens*, p. 401, *lunivallata*, *punctiversa*, p. 402, *rectilinea*, *unicolor*, p. 403, Africa, WARREN, t. c.; *G. semilutea*, Shan States, WARREN, p. 434, t. c. : n. spp.
Gullaca exilis, Assam, BASTELBERGER, p. 5, Ent. Zeitschr. Guben xix;
G. derasata, Madagascar, BASTELBERGER, p. 77, t. c. : n. spp.
Gymnoplocia n. g. for *Epilema parvidens* Dogn., WARREN, p. 42, Nov. Zool. xii.
Gynopteryx ligulifera, Parana, WARREN, p. 370, Nov. Zool. xii, n. sp.
Hamalea grisescens, Peru, WARREN, p. 46, Nov. Zool. xii; *H. brunneata*, Colombia, p. 322, *rufimbria*, Peru, p. 323, WARREN, t. c. : n. spp.
Haggardia spissata, subalbata, Natal, WARREN, p. 396, t. c. n. spp.
Hammaptera dispansa, Sta. Martha, *fumida*, Peru, WARREN, p. 47, t. c. n. spp.
Hemioplisis immaculata, Grenada, WARREN, p. 352, P. U. S. Mus. xxix, n. sp.
Herbita castanea, Costa Rica, WARREN, p. 371, Nov. Zool. xii, n. sp.
Heterophrya duplicata, Colombia, WARREN, p. 323, t. c. n. sp.
Heteroplasta lasioplaca Lower, to *Polydysta*, BASTELBERGER, p. 22, Ent. Zeitschr. Guben xix.
Heterusia ovaliplaga, Peru, WARREN, p. 53, Nov. Zool. xii; *H. cæcata*, Peru, WARREN, p. 346, t. c. : n. spp.
Hirasa denticulata to *Hirasodes*, WARREN, p. 396, t. c.
Holorista dentatilinea, Solomon Ids., WARREN, p. 428, t. c. n. sp.
Homosporu rhodoscopa Low. (as *Onychodes*)=(*procrita* Turn.), LOWRR, p. 178, Tr. R. Soc. S. Austral. xxix.
Hyalopola marginata, Peru, WARREN, p. 56, Nov. Zool. xii, n. sp.
Hygrochroma ? cervinata, Colombia, WARREN, p. 371, t. c. n. sp.
Hylemera subfulva, Sierra Leone, WARREN, p. 395, t. c. n. sp.
Hyphedyle divisa, Peru, WARREN, p. 43, t. c. n. sp.
Hypocela uniformis, Uganda, WARREN, p. 385, t. c. n. sp.
Hypolepis fulva, fuscata, Peru, WARREN, p. 48, t. c. n. spp.
Hypophracta n. g. *Enochromina*, *persimilis* n. sp., East Africa, WARREN, p. 382, t. c.
Hyposidra leprosa, Uganda, WARREN, p. 38, t. c.; *H. rauca*, vittata, Cagayan Sulu, WARREN, p. 437, t. c. : n. spp.
Hyrmina protecta, Brit. Guiana, KAYE, p. 121, pl. iii, fig. 8, Ent. Rec. xvii, n. sp.
Iru capnodiata ab. n. *reducta*, WARREN, p. 372, Nov. Zool. xii.
I. crenulata, Peru, WARREN, p. 372, t. c. n. sp.
Iridopsis grisescens, Quito, *subnigrata*, Peru, WARREN, p. 355, t. c. n. spp.
Ischnopteris conjungens, p. 59, *projectata*, p. 60, Peru, WARREN, t. c.; *I. brunneoviridis*, p. 359, *degener*, p. 360, Peru, WARREN, t. c. : n. spp.
Isochromodes denotata, distinct not var. of *auxilians*, WARREN, p. 372, t. c.
I. straminea, p. 67, *turbinata*, p. 68, Peru, WARREN, t. c. n. spp.
Iulocera n. g. type *Azata variegata* Warr., *I. albiapicatu* n. sp., Halmaheira, WARREN, p. 434, t. c.
Izu mediorincta, Amazons, WARREN, p. 307, t. c. n. sp.
Josia rudiana, Sta. Marta, WARREN, p. 44, t. c.; *J. turgida*, with ab. n. *conifera*, Venezuela, WARREN, p. 314, t. c. : n. spp.
Larentia sordidata and *autumnalis*, sexual differences, PETERSEN, p. 73, cuts, Mem. Ac. St. Petersb. (8) xvi, No. 2; *L. multistrigaria*, melanism, MORLEY, p. 170, 171, Ent. Rec. xvii.

- L. crenatus*. BARR. FICH. BULL. Zool. (Dublin) xviii. No. 32, Dublin: L. VERNIER, FICH. p. vii. fig. 7. p. 94. REPERTORIUM-RECTOR. F. Zool. Nov. LXXX. 1. n. sp.
- Lamachus* n. g. *Monocentrus*, p. 314, *apertus* n. sp., Ecuador, p. 311, WARREN, Nov. Zool. xii.
- Lamachus* n. g. near *Pavonia*, *variatus* n. sp., Peru, WARREN, p. 312, t. c.
- Lamachus variatus* ab. n. *capillatus*, WARREN, p. 312, t. c.
- Lamachus circumflexus* = *Hypodra megapala* Moore, Hamp. 1. SWINHOE, p. 62, Ann. Nat. Hist. 7. 171.
- Lamachus guineensis*, life-history, DYAR, p. 52, Psyche xii.
- Lamachus curvatus*, OCHS, WARREN, p. 422, Nov. Zool. xii. n. sp.
- Lamachus marginatus* ab. n. *cuticularis*, WARREN, p. 350, t. c.
- Lamachus thomasi* n. g. REBEL, p. 22, Verh. Ges. Wien 1908.
- Lapocetrus* n. g. near *Hamulia*, *rubrocap* n. sp., Angola, WARREN, p. 368, Nov. Zool. xii.
- Lapocetrus rubrocap*, Trinidad, WARREN, p. 368, t. c. n. sp.
- Lamachus* n. g. near *Hypodra*, *lanceatus* n. sp., S. Australia, and includes *Monocentrus variatus* Swinhoe, WARREN, p. 418, t. c.
- Lamachus variatus*, Indonesia, WARREN, p. 315, t. c. n. sp.
- Lamachus marginatus*, Peru, WARREN, p. 342, t. c. n. sp.
- Lamachus curvatus*, Trinidad, WARREN, p. 35, t. c. n. sp.
- Lamachus variatus*, Peru, WARREN, p. 32, t. c. n. sp.; *L. cinereus*, p. 369, t. c. n. sp.
- Lamachus variatus*, Peru, WARREN, t. c. n. sp.
- Lamachus variatus*, Peru, WARREN, p. 66, t. c. n. sp.
- Lamachus* n. g. *Samitellus*, p. 12, *abnormis* n. sp., p. 14, Hamulia, WARREN, t. c.
- Lamachus variatus*, *crustaceus*, DENHAMON, p. 255, Bull. Soc. ent. France 1905; *L. purpuraria*, var. at Reims, DENHAMON, p. 125, t. c. n. sp.; *L. purpuraria*, var. at Reims, DENHAMON, Bull. Soc. Reims xiv, p. 50.
- L. fulva*, New Zealand, HEDDER, p. 257, pl. xiii. fig. 2. Tr. N. Zealand Inst. xiv. 1. n. sp.
- Mazaria lineata* ab. n. *nigrofusca*, COLLINS, p. 45, Ent. Rec. xvi.
- Mazaria lineata*, *grisea*, and ab. *subgrisea*, Bolivia, WARREN, p. 363, Nov. Zool. xii. n. sp.
- Medasina leleitaria*, Khunja Hills, SWINHOE, p. 503, Ann. Nat. Hist. 7. 171; *M. pallidimargo*, Kashmir, SWINHOE, p. 627, op. cit. xiv. 1. n. sp.
- Melanochroa allisfascia*, *antigma*, Peru, WARREN, p. 349, t. c. n. sp.
- Melanophoria canadaria*, life-history, DYAR, p. 53, Psyche xii.
- Melinodes fulvitincta*, Argentina, WARREN, p. 68, Nov. Zool. xii. n. sp.
- Melinodes subalbida*, Uganda, WARREN, p. 35, t. c. n. sp.
- Mesocela seriata*, Angola, WARREN, p. 38, t. c. n. sp.
- Mesocela variata*, life-history, DYAR, p. 25, Psyche xii.
- Mesothia* n. g. near *Hypodra*, p. 403, *M. Acerida*, *gracilis* n. sp., W. Africa, p. 404, WARREN, Nov. Zool. xii.
- Mesotrophe* ? *subrubata*, Solomon Ids., WARREN, p. 111, t. c. n. sp.
- Metallopora* n. g. near *Hypophyra*, p. 38, *colori* n. sp., Minton Island, p. 39, WARREN, t. c.
- Miantochora*, the female, WARREN, p. 405, t. c.
- Microgonia affinis* ab. n. *intensa*, p. 373, *M. praeclara* ab. n. *cap*, p. 375, WARREN, t. c.
- M. alternata*, p. 373, *crepusculata*, Dominica, *exochorda*, Idem, p. 374, WARREN, t. c.; *M. roseata*, S. Africa, WARREN, p. 380, t. c.; *M. vestigiata*, Kashmir, SWINHOE, p. 620, Ann. Nat. Hist. 7. 171, n. sp.
- Microxydia gigantula*, *pumaria*, Peru, WARREN, p. 370, Nov. Zool. xii, n. sp.
- Milionia glauca* var. n. *basirubra*, THIERRY-MING, p. 101, Naturaliste 1910

- M. pericallis*, *callima*, p. 467, *aglaia*, p. 468, New Guinea, ROTHSCHILD & JORDAN, Nov. Zool. xii, n. spp.
- Mimaletia albipennis*, Sierra Leone, WARREN, p. 384, Nov. Zool. xii, n. sp.
- Mixocera torsilinea*, Paraguay, WARREN, p. 44, t. c. n. sp.
- Mnesiloba seminigra*, Assam, BASTELBERGER, p. 77, Ent. Zeitschr. Guben xix, n. sp.
- Monobolodes schistacea*, Solomon Ids., WARREN, p. 8, Nov. Zool. xii, n. sp.
- Myrice* Walk. = (*Hemigymnodes* Wart.), WARREN, p. 315, t. c.
- Myrmecophantes assimilis*, Peru, WARREN, p. 56, t. c. n. sp.
- Nadagarodes pulverata*, p. 435, *purpuraria*, p. 436, Solomon Ids., WARREN, t. c. n. spp.
- Negla tenuiorata* and *nachtigali*, distinguished, WARREN, p. 394, t. c.
- Nelo decipiens*, Ecuador, *tricolor*, Bolivia, THIERRY-MIEG, p. 181, Naturaliste 1905, n. spp.
- Nemoria dorsicristata*, Natal, WARREN, p. 34, Nov. Zool. xii, n. sp.
- Neodesmodes* n. g. near *Ischnopteris*, p. 360, *semialbata* n. sp., Peru, p. 361, WARREN, t. c.
- Neoscelis cristata* Wart. (as *Gymnoscelis*) = (*rivula* Hamp.), WARREN, p. 11, t. c.
- Neotega flavata*, *obscurata*, W. Africa, WARREN, p. 393, t. c. n. spp.
- Nesophila* n. g. *Semiothisinae*, *vulgaris* n. sp., Solomon Ids., WARREN, p. 436, t. c.
- Nipteria dispansa* ab. n. *infurcata*, WARREN, p. 57, t. c.
- N. directa*, p. 56, *elongaria*, *fumosata*, p. 57, *pallidilinea*, *subbrunnea*, p. 58, Peru, WARREN, t. c.; *N. excavata*, *flavipectus*, p. 350, *infirmata*, *piordaria*, *subordida*, p. 351, S. America, WARREN, t. c. : n. spp.
- Nomenia* n. g. for *Epirrhita duodecimlineata* Pack., PEARSALL, p. 126, Canad. Ent. 1905; *Nomenia*, cf. also *Venusia*.
- Nopia admiranda*, Natal, WARREN, p. 406, Nov. Zool. xii, n. sp.
- Noreia dentilineata*, Cagayan Sulu, WARREN, p. 419, t. c. n. sp.
- Notoreas ischnocyma*, New Zealand, MEYRICK, Tr. ent. Soc. London 1905, n. sp.
- Numia deceptorix*, Tucuman, WARREN, p. 69, Nov. Zool. xii, n. sp.
- Obolcola despecta*, Ivory Coast, WARREN, p. 400, t. c. n. sp.
- Ochroplitodes crocea*, Durban, WARREN, p. 392, t. c. n. sp.
- Ochyria discata*, Natal, WARREN, p. 391, t. c.; *O. amaura*, Quito, WARREN, p. 333, t. c. : n. spp.
- Ænopitila*? *subconfusa*, p. 60, *Æ. subfasciata*, p. 61, Peru, WARREN, t. c. n. spp.
- Enospila stellata*, variation, WARREN, p. 422, t. c.
- Omphalucha* n. g. *Bistoninae*, p. 396, *hirta*, Durban, p. 397, *O. ? rufinubes*, Angola, n. spp., p. 398, and incl. *Aphilopota ambusta*, WARREN, t. c.
- Oospila depressa*, Costa Rica, WARREN, p. 45, t. c.; *O. thalassina*, Peru, WARREN, p. 318, t. c. : n. spp.
- Opisthozia argenticincta*, Peru, WARREN, p. 55, t. c.; *O. fulvata*, Venezuela, p. 347, *scintillans*, Peru, p. 348, WARREN, t. c. : n. spp.
- Ophthalmophoru chouya*, Peru, THIERRY-MIEG, p. 193, Naturaliste 1905; *O. humilis*, Peru, WARREN, p. 55, Nov. Zool. xii; *O. hybridata*, Bolivia, WARREN, p. 347, t. c. : n. spp.
- Orsonoba*? *euryropti*, Queensland, LOWER, p. 178, Tr. R. Soc. S. Austral. xix; *O. orthogrammaria*, Hong Kong, LONGSTAFF, p. 184, Ent. Mag. 1905 : n. spp.
- Orthonama pudibunda*, Peru, *straminea*, Bolivia, WARREN, p. 334, Nov. Zool. xii.
- Orthoprora albiplaga*, *balteata*, Peru, WARREN, p. 49, t. c. n. spp.
- Ourapteryx gisela*, Java, THIERRY-MIEG, p. 192, Naturaliste 1905, n. sp.
- Oryfidonia* n. g. *Fidoniinae*, *fulvida* n. sp., Sierra Leone, WARREN, p. 400, Nov. Zool. xii.

- Ozola convergens*, Ceylon, WARREN, p. 419, t. c. n. sp.
Panthera semiconfluens, Peru, WARREN, p. 56, t. c. n. sp.
Parachoreutes merged in *Leptoctenopsis*, WARREN, p. 310, t. c.
Paracomistis maculata, Peru, WARREN, p. 69, t. c. n. sp.
Paradarisa ? *viriditincta*, Usambara, WARREN, p. 399, t. c. n. sp.
Paragramma n. g. *Hydriomenina*, p. 424, *mimula* n. sp., Solomon Ids., p. 425, WARREN, t. c.
Paragyrtis n. g. *Monocteniida* for *Panagra inostentata* Walk., MEYRICK, p. 222, Tr. ent. Soc. London 1905.
Parascotia nisseni, Algeria, TURATI, p. 42, pl. viii, fig. 1, Natural. Sicil. xviii, n. sp.
Pareclipsis insolita, Sierra Leone, WARREN, p. 39, Nov. Zool. xii, n. sp.
Pareuschema n. g. for *Eusch. regalis* Butl., THIERRY-MIEG, p. 181, Naturaliste 1905.
Penthophlebia subvenata, Peru, WARREN, p. 59, Nov. Zool. xii; *P. fuscicosta*, *posticaria*, *subapicata*, S. America, WARREN, p. 352, t. c. : n. spp.
Peratophyga bifasciata, Hainan, WARREN, p. 13, t. c. n. sp.
Pergama dissimilis, Peru, WARREN, p. 375, t. c. n. sp.
Peridela butaria ab. n. *spilota*, WARREN, p. 405, t. c.; *P. ochracea* to *Xenocista*, WARREN, p. 437, t. c.
P. sudanata, Sudan, WARREN & ROTHCHILD, p. 28, pl. iv, fig. 26, Nov. Zool. xii, n. sp.
Perigramma repetita, Costa Rica, WARREN, p. 352, Nov. Zool. xii, n. sp.
Perizera impudens, locality is Galapagos Islds., WARREN, p. 72, t. c.
P. ustipennis, Solomon Islds., WARREN, p. 423, t. c. n. sp.
Perizoma albirasa, *carnepecta*, p. 335, *fallax*, Peru, *ochritincta*, Huatuxco, p. 336, WARREN, t. c. n. spp.
Pero externata, Parana, *ravida*, Peru, WARREN, p. 376, t. c. n. spp.
Perusia verticata, Peru, WARREN, p. 377, t. c. n. sp.
Petrophora convallaria, life-history, DYAR, p. 59, Psyche xii.
Phaanane clathrata var. *aurata*, p. 45, pl. ix, figg. 5-12, *P. partitaria* ab. *litoralaria*, p. 46, figg. 13-20, TURATI, Natural. Sicil. xviii.
Phelloë semiplaga, Colombia, WARREN, p. 315, Nov. Zool. xii, n. sp.
Pherotesia alterata, *flavicincta*, *potens*, p. 356, *subjecta*, p. 357, S. America, WARREN, t. c. n. spp.
Phorodesma rubrimaculata, Natal, WARREN, p. 385, t. c. n. sp.
Phrygonis cruorata, Dominica, WARREN, p. 345, t. c. n. sp.
Phyllostoma carneata to *Euclynia*, WARREN, p. 67, t. c.
Pterocymia ? *rhombifascia*, Peru, WARREN, p. 337, t. c. n. sp.
Polla fuscata, Peru, WARREN, p. 70, t. c. n. sp.
Prasinoscia n. g. *Geometrina*, p. 318, *insolens* n. sp., Venezuela, p. 319, WARREN, t. c.
Problepsis venus, Amboina, *maxima*, Japan, *mozambica*, Africa, THIERRY-MIEG, p. 192, Naturaliste 1905, n. spp.
Psaliodes tripartita to *Hypolepsis*, WARREN, p. 49, Nov. Zool. xii.
P. brachiata, *dislocata*, Peru, WARREN, p. 50, t. c.; *P. marmorata*, Peru, WARREN, p. 337, t. c. : n. spp.
Psamatthia parallelaria, Costa Rica, WARREN, p. 308, t. c. n. sp.
Pseudasthena grataria, abb. n. *marginata* and *perflava*, WARREN, p. 426, t. c.
Pterocypha simplicata, Argentina, WARREN, p. 338, t. c. n. sp.
Ptychopa informipennis, Peru, WARREN, p. 324, t. c. n. sp.
Ptychopoda crassiuscula, pl. iv, fig. 36, *microptera*, fig. 7, p. 27, *granulosa*, fig. 38, p. 28, Sudan, WARREN & ROTHCHILD, Nov. Zool. xii, n. spp.
Pungueria capreolaria, pl. 11, fig. 7, ROUGEMONT, Bull. Soc. Neuchâtel xxix.
Pycnostega n. g. near *Neostega*, p. 393, *obscura* n. sp., Niger Riv. p. 394, WARREN, Nov. Zool. xii.
Pyrinia abditaria, p. 377, *hemixantha*, *humerala*, Peru, *tenuilinea*, Colombia, p. 378, WARREN, t. c. n. spp.

- Racasta caberaria* distinct from *spatiaria*, *extendata* Dogu. syn. of *caberaria*, WARREN, p. 310, t. c.
- Racheolopha rufilimes*, Ecuador, WARREN, p. 319, t. c. n. sp.
- Racheospila megastigma*, Costa Rica, WARREN, p. 45, t. c.; *R. tenuimargo*, Tijuco, WARREN, p. 319, t. c. : n. spp.
- Rhinoproria ochriplaga*, New Guinea, WARREN, p. 425, t. c. n. sp.
- Rhodesia* n. g. *Geometrinae*, *viridalbata* n. sp., Natal, and incl. *Comibana alboviridata* Saalm., WARREN, p. 386, t. c.
- Rhodochlora exquisita*, Peru, WARREN, p. 320, t. c. n. sp.
- Rhodophthitus procellosa*, Angola, WARREN, p. 394, t. c. n. sp.
- Rhomborista intermaculata*, Senegambia, WARREN, p. 387, t. c. n. sp.
- Ripula mahometaria* var. n. *chiffa*, THIERRY-MIEG, p. 192, *Naturaliste* 1905.
- Saccoploca excisa nigrostricta* ab. ? nov., WARREN, p. 43, t. c.
- Sangalopsis basidentata*, Peru, WARREN, p. 349, t. c. n. sp.
- Sarcinodes subfulvida* ab. n. *olivata*, WARREN, p. 9, t. c.
- Sauris angusta*, Solomon Islds., WARREN, p. 12, t. c. n. sp.
- Scardamia ditissima*, Mozambique, THIERRY-MIEG, p. 192, *Naturaliste* 1905, n. sp.
- Scea angustimargo*, Paraguay, WARREN, p. 315, Nov. Zool. xii, n. sp.
- Selidosema pungata* Feld. = (*fasciata* Philp.), MEYRICK, p. 223, Tr. ent. Soc. London 1905.
- Semiothisa crassiguama*, Paraguay, *orthodisca*, Peru, WARREN, p. 64, Nov. Zool. xii; *S. flavida nigrescens*, p. 363, *salsa*, Colombia, *quadricaudata*, Costa Rica, p. 364, *vulpina*, Ecuador, p. 365, WARREN, t. c. : n. spp.
- Sericosema angulata*, Vancouver, p. 361, *lignata*, Galapagos Islds., p. 362, WARREN, t. c. n. spp.
- Schematorhages* n. g. near *Ptychopoda*, p. 324, *arhostiodes* n. sp., Peru, p. 325, WARREN, t. c.
- Sciagraphia nephata*, life-history, DYAR, p. 115, *Psyche* xii.
- Somatina nucleata*, Sierra Leone, *rufilacta*, Durban, WARREN, p. 390, Nov. Zool. xii, n. spp.
- Somatolophia umbripennis* Hulst, validity of, TAYLOR, p. 61, *Canad. Ent.* 1905.
- Spargania nigrifasciata*, Peru, WARREN, p. 338, Nov. Zool. xii, n. sp.
- Stenalcidia* ? *divisata*, St. Lucia, WARREN, p. 358, t. c. n. sp.
- Stenodonta* n. g. near *Pero*, *incurvata* n. sp., Argentina, WARREN, p. 379, t. c.
- Sterrha irrufata*, S. Africa, WARREN, p. 391, t. c. n. sp.
- Stibarostoma pulverata*, Queensland, WARREN, p. 424, t. c. n. sp.
- Stigma kuldschaensis* var. n. *negrita*, THIERRY-MIEG, p. 193, *Naturaliste* 1905.
- Syndromodes delicata*, Natal, WARREN, p. 34, Nov. Zool. xii, n. sp.
- Synelys pudens*, Natal, WARREN, p. 35, t. c.; *S. lubricata*, Angola, WARREN, p. 391, t. c.; *S. ochreolata*, Peru, WARREN, p. 325, t. c. : n. spp.
- Syngria griseata*, Peru, WARREN, p. 309, t. c. n. sp.
- Syngriodes discolor*, Costa Rica, WARREN, p. 309, t. c. n. sp.
- Systatica xanthastis* Low., genus ? , LOWER, p. 179, Tr. R. Soc. S. Austral. xix.
- Tephriu bleusei*, Algeria, THIERRY-MIEG, p. 192, *Naturaliste* 1905, n. sp.
- Tephroclystia* and *Chloroclystis*, the distinction of species by sexual structures, PETERSEN, pp. 63-68, cuts, Mem. Ac. St. Petersb. (8) xvi, No. 2; *T. atomaria* ♀, WARREN, p. 392, Nov. Zool. xii.
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PYRALIDÆ, THYRIDIDÆ

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PTEROPHORIDÆ and ORNEODIDÆ.

[Cf. HAMPSON (718), HOUARD (780), MEYRICK (1041, 1043), TUTT (1512).]

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TORTRICIDÆ.

[Cf. DEWITZ (411, 412), DISQUÉ (420), DOGNIN (438), FERNALD (555, 556, 735), KEARFOTT (829–832), MEYRICK (1041, 1043), PETERSEN (1155).]

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threnodes, p. 585, *hemiopta*, *rhyndias*, p. 586, Ceylon, MEYRICK,
J. Bombay Soc. xvi, n. spp.
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N. America, KEARFOTT, t. c. n. spp.
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Canad. Ent. 1905, n. spp.
- Tortrix albicomana* var. n. *semipurpurana*, KEARFOTT, p. 9, t. c.
- T. symphoricarpana*, N. America, KEARFOTT, p. 92, t. c. n. sp.
- Tribonica* n. g. near *Heterocrossa*, p. 589, *eremitis* n. sp., Ceylon, p. 590,
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- Trymalitis* n. g. near *Commophila*, *margaris* n. sp., Ceylon, MEYRICK,
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TINEIDÆ.

- [Cf. CHRÉTIEN (316-319), DIETZ (419), DOGNIN (438), ENDERLEIN (506),
KEARFOTT (831, 833), KRONE (897), LOWER (980), MEYRICK (1041,
1043), MURTFELDT (1061), PORTIER (1215), SCHÜTZE (1366) SICH

(1391), SITOWSKI (1402), SORHAGEN (1428), WALSINGHAM (1564), WARREN & ROTHSCHILD (1576), ZANDER (1653).]

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- Homosaces* merged in *Phaosaces*, MEYRICK, p. 605, t. c.
- Homosetia obscurella*, p. 82, *chrysoadspersella*, pl. ii, fig. 8, p. 83, *maculatella*, p. 84, *H. (Stenoptinea* subg. n. ?) *ornatella*, pl. iv, fig. 3, *auriferella*, p. 87, *H. ? heteropalpella*, pl. iii, fig. 3, p. 88, DIETZ, Tr. Amer. ent. Soc. xxxi, n. spp.

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- Paraspistes* n. g. near *Nothris*, *ioloncha* n. sp., Ceylon, MEYRICK, p. 600, J. Bombay Soc. xvi.
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- Saptha smaragdita*, Ceylon, MEYRICK, p. 610, t. c. n. sp.
- Scardia coloradella*, p. 25, *approximatella*, pl. i, fig. 8, p. 27, N. America, DIETZ, Tr. Amer. ent. Soc. xxxi, n. spp.
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- Symmoca ponerias*, *calidella*, p. 37, *obliterata*, *molitor*, p. 38, Algeria, WALSHINGHAM, Ent. Mag. 1905, n. spp.
- Thiotricha orthiastis*, Punjab, MEYRICK, p. 591, J. Bombay Soc. xvi, n. sp.
- Timrya* Walk. (= *Decuria* Walk.), MEYRICK, p. 595, t. c.
- T. machlas*, p. 595, *metallanthæa*, *sphenias*, p. 596, Ceylon, id. t. c. n. spp.
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- ophrionella*, New York, pl. iii, fig. 6, *xanthostictella*, Georgia, p. 56, *mandarinella*, pl. iii, fig. 1, Ohio, p. 57, *roburella*, New Jersey, pl. ii, fig. 3, p. 58, *multistriatella*, Canada, pl. ii, fig. 5, *rileyi*, Florida, p. 59, *molybdanella*, California, pl. iii, fig. 7, p. 61, *geniculatella*, California, p. 62, *apicisignatella*, Pennsylvania, *angulifasciella*, pl. ii, fig. 7, Maryland, p. 65, *interstitiella*, Georgia, *fulvisuffusella*, New Hampshire, p. 68, *nigroatomella*, New Jersey, pl. iii, fig. 4, p. 70, DIETZ, Tr. Amer. ent. Soc. xxxi : n. spp.
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- Tortricomorpha grammarcha*, *diptherina*, *ergasia*, Ceylon, MEYRICK, p. 611, t. c. n. spp.
- Trachypepla phæoptila*, p. 236, *lathriopa*, p. 237, New Zealand, MEYRICK, Tr. ent. Soc. London 1905, n. spp.
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- Xylesthia kearfottella*, New Jersey, DIETZ, p. 29, Tr. Amer. ent. Soc. xxxi, n. sp.
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- X. paracyrta*, *psilotis*, Ceylon, MEYRICK, p. 602, t. c. n. spp.
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1. The first step in the process is to identify the problem. This involves gathering information about the situation and the people involved.

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SYRPHIDÆ.

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- Prionemicoris albithorax* var. nov. *patricius*, KIRKALDY, p. 352, Tr. ent. Soc. London 1905.
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- Savius bergi*, Brazil, BERGROTH, p. 107, Rev. Ent. franc. 1905, **n. sp.**
- Spathocera*, food-habits, ROYER, pp. 164-166, Bull. Soc. ent. France 1905.

LYGÆIDÆ.

- [Cf. BERGROTH (98), BERGROTH & SCHOUTEDEN (100), BREDDIN (180, 181), DISTANT (433, 435), HORVÁTH (776, 779), KIRKALDY (856).]
- Blissus diplopterus*, Cape Colony, DISTANT, p. 434, Tr. S. African Soc. xiv, **n. sp.**
- Cligenes athiops*, Cape Colony, DISTANT, p. 435, t. c. n. **sp.**
- Cymus nocturnus*, *waalbroeckii*, Congo, BERGROTH, p. 380, Ann. Soc. ent. Belgique 1905, **n. sp.**
- Geocoris itoniz*, Japan, HORVÁTH, p. 414, Ann. Mus. Hungar. iii; *G. willeyi*, New Britain, KIRKALDY, p. 349, pl. xvii, fig. 8, Tr. ent. Soc. London 1905 : **n. spp.**
- Lethæus nodulinervis*, Madagascar, BERGROTH, p. 373, Ann. Soc. ent. Belgique 1905, **n. sp.**
- Letheaster* **n. g.** p. 124, *anthocorides* **n. sp.**, Java, p. 125, BREDDIN, Mt. Mus. Hamburg xxii.
- Nesodromus* **n. g.** *Aphanaria*, p. 371, *pleuriticus* **n. sp.**, Madagascar, p. 372, BERGROTH, Ann. Soc. ent. Belgique 1905.
- Oxycarenus hyalinipennis*, pp. 88-90, pl. iii, figg. 12-18, larva, p. 101, figg. 15-17, KUHLGATZ, Mt. Mus. Berlin iii.
- O. breddini*, Congo, BERGROTH, p. 380, Ann. Soc. ent. Belgique 1905; *O. exitionus*, Cape Town (injurious to peach etc.), DISTANT, p. 169, Entomologist 1905; *O. lifuanus*, Lifu, KIRKALDY, p. 347, Tr. ent. Soc. London 1905 : **n. spp.**
- Pachygrontha miriformis*, Banguey, BREDDIN, p. 213, Mt. Mus. Hamburg xxii, **n. sp.**
- Pachymerus nereis*, Lifu, KIRKALDY, p. 347, pl. xvii, fig. 7, Tr. ent. Soc. London 1905, **n. sp.**
- Pamera lounsburyi*, Cape Colony, DISTANT, p. 435, Tr. S. African Soc. xiv, **n. sp.**
- Peritrechus gracilicornis* var. n. *xanthopus*, HORVÁTH, p. 272, Bol. Soc. espan. v.
- Ptochiomera kydippe*, Lifu, KIRKALDY, p. 346, Tr. ent. Soc. London 1905, **n. sp.**
- Pyrrhobaphus satrapa*, Java, p. 119, *regulus*, Sumbawa, p. 120, BREDDIN, Mt. Mus. Hamburg xxii, **n. spp.**

Taphropeltus championi, Guadarrama, REUTER, p. 52, Tr. ent. Soc. London 1905, n. sp.

Vertomannus tener, Java, BREDDIN, p. 121, Mt. Mus. Hamburg xii, n. sp.

PYRRHOCORIDÆ.

[Cf. BERGROTH (98), BREDDIN (181), KIRKALDY (856), KUHLGATZ (898, 899), SCHOUTEDEN (1341).]

Genarus sanguis Gerst. to *Odontopus*, BERGROTH, p. 371, Ann. Soc. ent. Belgique 1905.

Dynamenais n. g. for *Ectatops venustus* Walk., KIRKALDY, p. 343, Tr. ent. Soc. London 1905.

Dysdercus cingulatus, larval stages, KUHLGATZ, pp. 595-616, Zool. Jahrb. Suppl. viii; *D. sidi*, valid sp., p. 81, pl. ii, figg. 8, 9, *cingulatus*, pl. ii, figg. 15, 16, p. 83, *superstitiosus* and allies, pp. 86, 87, natural history, larval notes, pp. 98-101, KUHLGATZ, Mt. Mus. Berlin iii.

Scantius circumcinctus, characters and var., BERGROTH, p. 371, Ann. Soc. ent. Belgique 1905; *S. abyssinicus*, SCHOUTEDEN, p. 10, Ann. Soc. ent. Belgique 1905.

Physopelta seria, Java, BREDDIN, p. 127, Mt. Mus. Hamburg xxii, n. sp.

TINGIDÆ.

[Cf. BERGROTH & SCHOUTEDEN (100), DISTANT (435), HORVÁTH (777, 779), KIRKALDY (859).]

Acalypta carpathica, Roumania, *sejuncta*, Armenia, HORVÁTH, p. 561, Ann. Mus. Hungar. iii, n. spp.

Acanthocheila kahavalu, Peru, KIRKALDY, p. 216, Bull. Soc. ent. France 1905, n. sp.

Aconchus subg. n. cf. *Galeatus*.

Americia annæ, Peru, KIRKALDY, p. 216, Bull. Soc. ent. France 1905, n. sp.

Astolphos n. g. near *Phatnoma*, p. 428, *capitatus* n. sp., Cape Town, pl. viii, fig. 5, p. 429, DISTANT, Tr. S. African Soc. xiv.

Bistria sareptana var. n. *adelpha*, HORVÁTH, p. 563, Ann. Mus. Hungar. iii.

B. lepida, Tunis, HORVÁTH, p. 562, t. c. n. sp.

Campylosteira fulleni var. n. *miridita*, p. 558, *pilifera* var. n. *humilis*, p. 560, and var. n. *diminuta*, p. 561, HORVÁTH, t. c.

C. dispar, p. 558, *cognata*, p. 559, *sororcula*, 560, Algeria, HORVÁTH, t. c. n. spp.

Catoplatus nigriceps, Europe, HORVÁTH, p. 569, t. c. n. sp.

Compseus montandoni, Delagoa Bay, pl. viii, fig. 15, DISTANT, p. 434, Tr. S. African Soc. xiv, n. sp.

Copium glabricorne to *Eurycera*, fig. pl. viii, fig. 9, DISTANT, p. 430, t. c.

Derephynia nigricosta, Spain, HORVÁTH, p. 272, Bol. Soc. espan. v, n. sp.

Dictyonota tricornis varr., HORVÁTH, p. 563, Ann. Mus. Hungar. iii.

D. ethiops, Algeria, p. 563, *iberica*, S. Spain, p. 563, HORVÁTH, t. c. n. spp.

Galeatus consimilis, Spain, HORVÁTH, p. 273, Bol. Soc. espan. v; *G. (Aconchus)* subg. n. p. 566, *urbanus*, Italy, p. 566, HORVÁTH, Ann. Mus. Hungar. iii: n. spp.

Hædus n. g. near *Leptostyla*, *clypeatus* n. sp., Cape Colony, p. viii, fig. 12, DISTANT, p. 432, Tr. S. African Soc. xiv.

Hanuala n. g. near *Euryparsa*, *leinahoni* n. sp., Peru, KIRKALDY, p. 217, Bull. Soc. ent. France 1905.

- Hyalochiton* subg. n. of *Galeatus*, for *G. komaroffi* Jak., HORVÁTH, p. 566, Ann. Mus. Hungar. iii.
- Lullius* n. g. near *Serenithia*, p. 429, *major*, pl. viii, fig. 7, *L. ? minor*, fig. 8, n. spp., Cape Colony, p. 430, DISTANT, Tr. S. African Soc. xiv.
- Monanthia montandoni* var. n. *rivalis*, p. 570, *putoni* var. n. *pulla*, p. 572, HORVÁTH, Ann. Mus. Hungar. iii.
- M. ruficeps*, Tunis, *subdola*, Araxes Valley, HORVÁTH, p. 571, t. c.; *M. mitrata*, Grahamstown, pl. viii, fig. 14, DISTANT, p. 433, Tr. S. African Soc. xiv : n. spp.
- Monostei'a cleopatra*, Egypt, HORVÁTH, p. 572, Ann. Mus. Hungar. iii, n. sp.
- Physatocheila confinis*, S. E. Europe etc., HORVÁTH, p. 570, t. c. n. sp.
- Phyllotocheila waelbroeckii*, Congo, SCHOUTEDEN, p. 381, Ann. Soc. ent. Belgique 1905; *P. junodi*, Transvaal, pl. viii, fig. 10, DISTANT, p. 431, Tr. S. African Soc. xiv : n. spp.
- Sanazurius* n. g. *Tingidaria*, *cuneatus* n. sp., Cape Colony, pl. viii, fig. 11, DISTANT, p. 431, t. c.
- Serenithia ruficornis* var. n. *dubia*, *femoralis* var. n. *antennata*, p. 556, and varr. n. *thoracica*, *imbecilla*, p. 557, *lata* var. n. *apicicornis*, p. 557, *nigra* var. n. *collaris*, p. 558, HORVÁTH, Ann. Mus. Hungar. iii.
- S. turanica*, Turkestan, p. 556, *blandula*, Caucasus, p. 558, HORVÁTH, t. c.; *S. peringueyi*, Cape Town, DISTANT, pl. viii, fig. 6, p. 429, Tr. S. African Soc. xiv : n. spp.
- Sinalda* n. g. p. 426 for part of *Phatnoma*, *elegans*, pl. viii, fig. 2, *reticulata*, fig. 3, p. 427, *nebulosa*, fig. 4, p. 428, n. spp., S. Africa, DISTANT, t. c.
- Stephanitis azaleæ* n. n. for *T. pyrioides* Scott, HORVÁTH, p. 568, Ann. Mus. Hungar. iii.
- S. rhododendri*, Holland, HORVÁTH, p. 567, t. c. n. sp.
- Teleonemia australis*, Cape Town, pl. viii, fig. 13, DISTANT, p. 432, Tr. S. African Soc. xiv, n. sp.
- Tingis chlorophana* to *Stephanitis*, *auriculata* varr. n., HORVÁTH, p. 569, Ann. Mus. Hungar. iii.
- Ulmus* n. g. *Cantacaderaria*, p. 425, *testudineatus* n. sp., S. Africa, pl. viii, fig. 1, p. 426, DISTANT, Tr. S. African Soc. xiv.

BERYTIDÆ and ARADIDÆ.

[Cf. DISTANT (434), HORVÁTH (774, 776).]

- Aneurys greeni*, Ceylon, DISTANT, p. 194, Entomologist 1905, n. sp.
- Aradus consentaneus*, Japan, HORVÁTH, p. 415, Ann. Mus. Hungar. iii, n. sp.
- Megalomerium tenellum*, New Guinea, *breviceps*, Hungary, HORVÁTH, p. 57, t. c. n. spp.
- Parajalysus andinus*, *concivis*, Peru, HORVÁTH, p. 60, t. c. n. spp.
- Pneustocerus* n. g. *nigricornis* n. sp., New Guinea, HORVÁTH, p. 59, t. c.
- Triconulus* n. g. *egyptius* n. sp., Egypt, HORVÁTH, p. 58, t. c.
- Yemma* n. g. *exilis* n. sp., Japan, HORVÁTH, p. 56, t. c.

HYDROMETRIDÆ.

[Cf. BREDDIN (180), BUENO (210), DISTANT (435), HORVÁTH (776), MjöBERG (1050), SCHOUTEDEN (100).]

- Angillia germari*, Cape Colony, DISTANT, p. 436, Tr. S. African Soc. xiv, n. sp.

- Gerris ysolt*, Java, BREDDIN, p. 130, Mt. Mus. Hamburg xxii, **n. sp.**
Hydrometra martini, habits, BUENO, pp. 12-14, Canad. Ent. 1905; *H. australis* Say, a good species, BUENO, p. 284, t. c.
H. procera, Japan, HORVÁTH, p. 416, Ann. Mus. Hungar. iii; *H. australis*, Georgia, BUENO, p. 15, Canad. Ent. 1905: **n. spp.**
Mesovelis proxima, Congo, SCHOUTEDEN, p. 388, Ann. Soc. ent. Belgique 1905, **n. sp.**
Metrocoris strangulator, Java, BREDDIN, p. 134, Mt. Mus. Hamburg xxii, **n. sp.**
Peritopus vicarians, Java, BREDDIN, p. 129, t. c. **n. sp.**
Ptilomera asbolus, Java, BREDDIN, p. 132, t. c. **n. sp.**
Rhagadotarsus n. g. near *Rhagovelia*, p. 136, *kraepelini n. sp.*, Java, p. 137, BREDDIN, t. c. **n. spp.**

REDUVIIDÆ.

- [Cf. BERGROTH (98, 99), BERGROTH & SCHOUTEDEN (100), BREDDIN (180-182), KIRKALDY (856), VARELA (1532, 1533).]
Allæorrhynchus piceus, Java, BREDDIN, p. 145, Mt. Mus. Hamburg xxii, **n. sp.**
A. perminutus, Congo, BERGROTH, p. 386, Ann. Soc. ent. Belgique 1905, **n. sp.**
Breddinia lobata, p. 98, *B. ? gracilis*, p. 99, W. Africa, VARELA, Bol. Soc. espan. v, **n. spp.**
Diarthrotarsus n. n. for *Lycimna* Stål, BERGROTH, p. 112, Rev. Ent. franc. 1905.
Ghilianella congoensis, Africa, SCHOUTEDEN, p. 385, Ann. Soc. ent. Belgique 1905, **n. sp.**
Harpactor (Harpiscus) ausmeti, Guinea, VARELA, p. 97, Bol. Soc. espan. v, **n. sp.**
Heteropinus and *Platymicrus* distinguished, BREDDIN, p. 264, Wien. ent. Zeit. xxiv.
Heza signoreti Fallou, BERGROTH, p. 108, Rev. Ent. franc. 1905.
Katanga fuscolivens, Congo, BERGROTH, p. 373, Ann. Soc. ent. Belgique 1905, **n. sp.**
Margasus ornatus, p. 145, *martini*, p. 146, *nitidus*, *elegans*, p. 147, Madagascar, VARELA, Bol. Soc. espan. v, **n. spp.**
Munia n. g. near *Irantha*, p. 99, *schoutedeni n. sp.*, Cameroons, p. 100, VARELA, t. c.
Oncocephalus amen, New Britain, KIRKALDY, p. 340, Tr. ent. Soc. London 1905, **n. sp.**
Pasiopsis nabidoides, Java, BREDDIN, p. 145, Mt. Mus. Hamburg xxii, **n. sp.**
Patago n. n. for *Hoplogenus* Stål, BERGROTH, p. 112, Rev. Ent. franc. 1905.
Physoderus azrael, New Britain, KIRKALDY, p. 339, Tr. ent. Soc. London 1905, **n. sp.**
Pirates grandis Fallou, BERGROTH, p. 109, Rev. Ent. franc. 1905.
Platymicrus aneuroides, Cameroons, BREDDIN, p. 263, Wien. ent. Zeit. xxiv, **n. sp.**
Pæliopus n. n. for *Milyas* Stål, BERGROTH, p. 112, Rev. Ent. franc. 1905.
Pygolanpis kinchasse, Congo, SCHOUTEDEN, p. 384, Ann. Soc. ent. Belgique 1905, **n. sp.**
Sastrapada noctivaga, BERGROTH, p. 382, *vicina*, *S. (Harpagochares) signata*, p. 383, SCHOUTEDEN, Congo, Ann. Soc. ent. Belgique 1905: **n. spp.**
Scadru nigrigula, Java, BREDDIN, p. 147, Mt. Mus. Hamburg xxii, **n. sp.**
Sphedanolestes albigula, Java, BREDDIN, p. 148, t. c. **n. sp.**

- Spiniger bergi*, p. 110, *paganus*, p. 111, Brazil, BERGROTH, Rev. Ent. franc. 1905, n. spp.
Sycanus rhombogaster, Banguey, BREDDIN, p. 217, Mt. Mus. Hamburg xxii, n. sp.
Toxopus n. g. Ectrichodiina, p. 374, *politus* n. sp., Madagascar, p. 375, BERGROTH, Ann. Soc. ent. Belgique 1905.
Tragelaphodes bergrothi, E. Africa, BREDDIN, p. 264, Wien. ent. Zeit. xxiv, n. sp.
Tribelocephala breviceps, Congo, BERGROTH, p. 375, Ann. Soc. ent. Belgique 1905, n. sp.
Zelus peregrinus, natural history, eggs, SWEZEY, p. 232, pl. xvi, Rep. exp. Stat. Hawaii i.
Z. gradarius, Brazil, BERGROTH, p. 109, Rev. Ent. franc. 1905, n. sp.

CIMICIDÆ, ANTHOCORIDÆ, HENICOCEPHALIDÆ, CERATOCOMBIDÆ.

[Cf. BERGROTH (98), BERGROTH & SCHOUTEDEN (100), BREDDIN (180), GIRAULT (666, 667), HEIDEMANN (733), HORVÁTH (776).]

- Ænitopechys* n. g. *Henicocephalidæ*, p. 139, *necopinatus* n. sp., Java, p. 140, BREDDIN, Mt. Mus. Hamburg xxii.
Cocles n. g. *Henicocephalidæ*, *contemplator* n. sp., Madagascar, BREDDIN, p. 142, t. c.
Clinocoris lectularia, life-history, food-habits, longevity, GIRAULT, Psyche xii, pp. 61-74; *C. lectularius* attacks mice, and *C. columbarius* attacks man and mouse, GIRAULT, pp. 117-123, t. c.
Glyptocombus n. g. *Ceratocombidæ*, p. 192, *G. saltator* n. sp., Plummer's Is., p. 194, HEIDEMANN, P. ent. Soc. Washington 1905.
Henicocephalus hymeneus, *laticollis*, Madagascar, p. 376, *tuberculatus*, Congo, p. 377, BERGROTH, Ann. Soc. ent. Belgique 1905; *H. cornifrons*, Congo, SCHOUTEDEN, p. 385, Ann. Soc. ent. Belgique 1905; *H. soriculus*, p. 143, *sanguinipes*, p. 144, Java, BREDDIN, Mt. Mus. Hamburg xxii : n. spp.
Hypselosoma matsumura, Japan, HORVÁTH, p. 417, Ann. Mus. Hungar. iii, n. sp.
Piezostethus congoensis, Congo, BERGROTH, p. 386, Ann. Soc. ent. Belgique 1905, n. sp.

CAPSIDÆ.

[Cf. BREDDIN (180), HEIDEMANN (734), HORVÁTH (776, 779), KIRKALDY (856), REUTER (300, 1259, 1262).]

- Adelphocoris torquatus*, p. 12, *apicalis*, *divergens*, p. 13, *luridus*, p. 14, *fasciiger*, p. 17, *teniophorus*, p. 18, China, REUTER, Annuaire Mus. St. Petersb. 1905; *A. demissus*, Japan, HORVÁTH, p. 418, Ann. Mus. Hungar. iii : n. spp.
Amblytylus scutellaris, Spain, HORVÁTH, p. 274, Bol. Soc. espan. v, n. sp.
Atractotomus nitidus, Spain, HORVÁTH, p. 275, t. c. n. sp.
Chlamydatulus longirostris Hérault, REUTER, p. 8, Bull. Soc. ent. France 1905, n. sp.
Cobalorrhynchus n. g. *Bryocoraria*, p. 1, *biquadrangulifer* n. sp., China, p. 2, REUTER, Annuaire Mus. St. Petersb. 1905.
Cyphodema hilare, Japan, HORVÁTH, p. 419, Ann. Mus. Hungar. iii, n. sp.
Deraeocoris ater var. *n. amplius*, HORVÁTH, p. 419, t. c.
D. pallidus, p. 419, *elegantulus*, p. 420, Japan, id. t. c. n. spp.
Dicyphus nigrifrons, China, REUTER, p. 61, Annuaire Mus. St. Petersb. 1905, n. sp.

- Ectenellus* n. g. near *Phylidea*, p. 66, *tibialis* n. sp., China, p. 67, REUTER, t. c.
Ectmetopterus n. g. near *Halticus*, p. 59, *angusticeps* n. sp., China, p. 60, REUTER, t. c.
Eucharicoris n. g. near *Phylus*, p. 64, *pallidipennis* n. sp., China, p. 65, REUTER, t. c.
Halticus micantulus, Japan, HORVÁTH, p. 422, Ann. Mus. Hungar. iii, n. sp.
Imogen n. g. p. 337, *formosa* n. sp., New Britain, p. 338, KIRKALDY, Tr. ent. Soc. London 1905.
Lamocoris ? *javanus*, Borobudur, BREDDIN, p. 149, Mt. Mus. Hamburg xxii, n. sp.
Leucodellus n. g. near *Plagiognathus*, p. 68, *albidus* n. sp., China, p. 69, REUTER, Annuaire Mus. St. Petersb. 1905.
Liistonotus n. g. near *Liocoris*, p. 54, *xanthomelas*, p. 55, n. sp., Gansu, REUTER, t. c.
Liocoridea melanostoma, China, REUTER, p. 53, t. c. n. sp.
Lopistus n. n. for *Lopus* Spin. nec Hahn, KIRKALDY, p. 268, Wien. ent. Zeit. xxiv.
Lygus flavigenis, Japan, HORVÁTH, p. 419, Ann. Mus. Hungar. iii ; *L. rugosicollis*, p. 28, *longipennis*, p. 29, *striicornis*, p. 31, *pulchellus*, p. 33, *potanini*, p. 35, *dasypterus*, p. 37, *trivittulatus*, p. 39, *clavicornis*, p. 41, *validicornis*, p. 42, *bianchii*, p. 44, China, REUTER, Annuaire Mus. St. Petersb. 1905 : n. spp.
Mecomma chinensis, Schübbag, REUTER, p. 63, t. c. n. sp.
Orthocephalus beresovskii, Gansu, REUTER, p. 57, t. c. n. sp.
Pachytomella cursitans, Cantabrian Mts., REUTER, p. 53, Tr. ent. Soc. London 1905, n. sp.
Pantiliodes piceus, China, REUTER, p. 7, Annuaire Mus. St. Petersb. 1905, n. sp.
Phytocoridea n. g. near *Phytocoris*, p. 21, *dispar* n. sp., China, p. 22, REUTER, t. c.
Phytocoris potanini, China, REUTER, p. 4, t. c. n. sp.
Pilophorus setulosus, Japan, HORVÁTH, p. 421, Ann. Mus. Hungar. iii, n. sp.
Plagiognathus lividus, China, REUTER, p. 73, Annuaire Mus. St. Petersb. 1905, n. sp.
Psallus holomelas, p. 69, *alpestris*, p. 70, *opacus*, p. 72, China, REUTER, t. c. ; *P. juniperi*, New York, HEIDEMANN, p. 49, J. N. York Ent. Soc. xiii : n. spp.
Pseudoloxops n. n. for *Loxops*, Fieb. *P. coccinatus* n. n. for *coccineus* Mey., KIRKALDY, p. 268, Wien. ent. Zeit. xxiv.
Reuteroscopus n. n. for *Episcopus* Reut., KIRKALDY, p. 268, t. c.
Stenodema rubrinerve, Japan, HORVÁTH, p. 417, Ann. Mus. Hungar. iii, n. sp.
Sthenarus potanini, p. 77, *pallidipes*, p. 78, *interruptus*, p. 79, *niveoarcuatus*, p. 80, REUTER, Annuaire Mus. St. Petersb. 1905, n. spp.
Strongylocoris obscurus var. n. *oberthuri*, REUTER, p. 8, Bull. Soc. ent. France 1905.

HYDROCORISÆ

[Cf. BORDAS (138, 139), BREDDIN (180, 185), BUENO (206, 209, 211-213), HORVÁTH (776), HÜBER (795), KIRKALDY (862), MONTANDON (1058, 1059), WIELOWIETSKI (1631).]

Making collections, BUENO, Canad. Ent. 1905, pp. 137-142.

German *Hydrocorisæ*, HÜBER, Jahresh. Ver. Württemb. lxi, pp. 91-175.

Primary reprod. organs, ♂ *Nepa*, BORDAS, C.R. Soc. Biol. lviii, pp. 382-384.
Alimentary canal, *Nepa*, BORDAS, t. c. pp. 169, 170.

Anisops occipitalis, Java, BREDDIN, p. 153, Mt. Mus. Hamburg xxii, n. sp.
Enithares intricatus, Java, BREDDIN, p. 154, t. c. n. sp.

Gelastocorida, the American, BUENO, p. 290, Ohio Natural. v.

Ilyocoris cimicoides, natural history, KIRKALDY, pp. 173-176, Entomologist 1905.

Matinus americanus, Brazil, MONTANDON, p. 404, Ann. Mus. Hungar. iii, n. sp.

Micronecta, table and characters of Javanese, BREDDIN, pp. 155-160, Mt. Mus. Hamburg xxii.

M. vanduzeei, Philippines, *thelxina*, *memonoides*, Ceylon, *anna*, p. 262, *erato*, p. 263, Australia, KIRKALDY, Ent. News Philad. xvi; *M. quadristrigata*, *fugitans*, *ludibunda*, *pardalina*, *inflatula*, Java, BREDDIN, p. 57, Soc. ent. xx; *M. sedula*, Japan, HORVÁTH, p. 423, Ann. Mus. Hungar. iii: n. spp.

Mononyx peruviana, Callanga, MONTANDON, p. 403, Ann. Mus. Hungar. iii, n. sp.

Nerthra stygica, pp. 287-289, BUENO, Ohio Natural. v.

Notonecta glauca, migration, PROWAZEK, p. 67, Zeitschr. Insbiol. i.

N. howardii, Arizona, BUENO, p. 151, J. N. York Ent. Soc. xiii, n. sp.

Pelocoris horvathi, Brazil, MONTANDON, p. 405, Ann. Mus. Hungar. iii, n. sp.

Ranatra, stridulation, BUENO, pp. 85-87, Canad. Ent. 1905; *R. longipes* and *varipes*, BREDDIN, p. 152, Mt. Mus. Hamburg xxii.

R. parmata, p. 389, *annulipes*, p. 393, *macrophthalma*, p. 395, *unidentata*, p. 397, MONTANDON, Bull. Soc. Bucarest xiv; *R. stali*, Philippines, p. 390, *brevicauda*, p. 391, *signoreti*, p. 392, Brazil, *robusta*, Columbia and Surinam, p. 396, MONTANDON, t. c.; *R. kirkaldyi*, N. America, BUENO, p. 187, Canad. Ent. 1905: n. spp.

HOMOPTERA.

CICADIDÆ.

[Cf. BREDDIN (181), DISTANT (422-432, 670), IMHOF (804), JACOBI (806), KIRKALDY (866), KUHLGATZ (899), UHLER (1515).]

Structure of the wings of *Cicadidæ*, IMHOF, Zeitschr. wiss. Zool. lxxxiii, pp. 211-223.

Abagazara n. g. type *Callipsaltria bicolorata* Dist., DISTANT, p. 206, Ann. Nat. Hist. (7) xvi.

Abricta castanea, N. Australia, p. 27, *burgessi*, Queensland, p. 28, DISTANT, t. c.; *A. elegyi*, N. Australia, DISTANT, p. 281, t. c.: n. spp.

Abroma boweringi, China, DISTANT, p. 32, Ann. Nat. Hist. (7) xvi; *A. philippinensis*, Palouan, DISTANT, p. 561, t. c.; *A. tadenburgi*, Banguey, BREDDIN, p. 221, Mt. Mus. Hamburg xxii: n. spp.

Adenia n. g. *Parnisaria*, p. 210, *yerburyi* n. sp., Aden, p. 311, DISTANT, Ann. Nat. Hist. (7) xvi.

Ahomana n. g. *Tibicinaria*, p. 23, *neotropicalis*, Peru, *chilensis*, Chile, p. 24, n. spp., DISTANT, t. c.

Akumba n. g. *Chlorocystaria*, *athiopica* n. sp., Trop. Africa, DISTANT, p. 562, t. c.

Aola n. g. type *Pomponia bindusara* Dist., DISTANT, p. 69, op. cit. xv.

Arfuku n. g. type *Cephaloxys fulva* Walk., DISTANT, p. 276, op. cit. xvi.

Aricasa n. g. type *Tympanoterpes colombica* Dist., *A. nigrovittata* n. sp., Brazil, DISTANT, p. 314, op. cit. xv.

- Ayesha* n. g. type *Cosmopsaltria spathulata* Stål, DISTANT, p. 63, t. c.
Balinta n. g. type *Cicada octonotata* Westw., p. 383, *B. auriginea* n. sp., Mts. Song-Chai, p. 384, DISTANT, t. c.
Basa n. g. type *Dundubia singularis* Walk., DISTANT, p. 309, t. c.
Bavea n. g. type *Cephaloxys concolor* Walk., the habitat being S. Africa, DISTANT, p. 214, op. cit. xvi.
Burbunga n. g. type *Tibicen gilmorei* Dist., *B. inornata* n. sp., W. Australia, DISTANT, p. 29, t. c.
Carineta boliviana, p. 484, *illustris*, p. 485, *peruviana*, p. 486, S. America, DISTANT, op. cit. xv, n. spp.
Champaka n. g. type *Pomponia viridimaculata* Dist., DISTANT, p. 70, t. c.
Chonoria n. g. type *Fidicina crassipennis* Walk., DISTANT, p. 481, t. c.
Cicada grossa, synonymy, UHLER, p. 76, Ent. News Philad. xvi; *C. rubifurca* Walk. to *Abroma* (cf. *Panka* below), DISTANT, p. 35, Ann. Nat. Hist. (7) xvi; *C. complex* Walk., note, DISTANT, p. 274, t. c.; *C. hirundo* Walk. and *confacies* Walk. to *Purana*?, *C. nodosa* and *acutipennis* Walk. to *Diceropyga*?, *C. stipata* Walk. to *Terpnosia*?, DISTANT, p. 553, t. c.
C. pulverulenta, Madagascar and Seychelles, DISTANT, p. 199, Tr. ent. Soc. London 1905; *C. tridentigera*, p. 220, *nesiotes*, p. 221, Banguay, BREDDIN, Mt. Mus. Hamburg xxii; *C. townsendii*, Arizona, UHLER, p. 74, Ent. News Philad. xvi: n. spp.
Collina n. g. near *Tibicen*, for *Odopaea biolleyi* (cut on p. 143) and *medea*, DISTANT, Biol. Centr.-Amer. Homopt. i.
Conibosa n. g. type *Cephaloxys occidentis* Walk., DISTANT, p. 215, Ann. Nat. Hist. (7) xvi.
Cosmopsaltria tonkiniana, Tonkin, JACOBI, p. 429, pl. xxi, fig. 1, Zool. Jahrb. Syst. xxi; *C. alticola*, Borneo, DISTANT, p. 200, Tr. ent. Soc. London 1905: n. spp.
Daza n. g. type *Zammara monteruma* Walk., DISTANT, p. 480, Ann. Nat. Hist. (7) xv.
Derotettix wagneri, Rio Salado, DISTANT, p. 209, op. cit. xvi, n. sp.
Diceropyga boninensis, Bonin Ids., DISTANT, p. 67, op. cit. xv; *D. aluana*, Solomon Ids., DISTANT, p. 557, op. cit. xvi: n. spp.
Diemenia n. g. type *Cicada coleoprata* Walk., DISTANT, p. 206, t. c.
Dokuma n. g. type *Dundubia nigristigma* Walk., DISTANT, p. 69, op. cit. xv.
Drepanopsaltria merged in *Prasia*, DISTANT, p. 278, op. cit. xvi.
Dulderana n. g. type *Cicada truncatella* Walk., DISTANT, p. 280, t. c.
Dundubiaria, synopsis of genera, DISTANT, pp. 58-70, op. cit. xv.
Fatima n. g. type *Cosmopsaltria capitata* Dist., DISTANT, p. 62, t. c.
Fidicina roberti, p. 315, *lacteipennis*, p. 316, Brazil, *flavibasis*, Ecuador, p. 317, DISTANT, t. c. n. spp.
Gwana vestita, Yunnan, DISTANT, p. 121, Entomologist 1905, n. sp.
Gazuma n. g. *Tibicininae*, *barrettæ*, *delalandei*, *pretoriæ* n. spp., S. Africa, DISTANT, p. 268, Ann. Nat. Hist. (7) xvi.
Graptotettix rubromaculatus, Celebes, DISTANT, p. 482, op. cit. xv, n. sp.
Guaranisaria n. g. *Carinetaria*, *dissimilis* n. sp., Argentina, DISTANT, p. 560, op. cit. xvi.
Gudanga n. g. *Parnisaria*, *boulayi* n. sp., W. Australia, DISTANT, p. 208, t. c.
Gymnotympana olivacea, New Guinea, DISTANT, p. 563, t. c. n. sp.
Haphsa n. g. type *Dundubia nicomache* Walk., *H. crassa* n. sp., Yunnan, DISTANT, p. 64, op. cit. xv.
Hemisciera durhami, Brazil, DISTANT, p. 317, t. c. n. sp.
Herrera n. g. type *Cicada marginella* Walk., DISTANT, p. 486, t. c.
Hovana n. g. type *Hemidictya distantis* Branca, DISTANT, p. 279, op. cit. xvi.

- Inyamana* n. g. *Tibicininae*, p. 266, *hamaris*, *ochracea* n. spp., E. Africa p. 267, DISTANT, t. c.
- Iruana* n. g. near *Lacetas*, *sulcata* n. sp., E. Africa, DISTANT, p. 278, t. c.
- Jacatra* n. g. *Tibicininae*, *typica* n. sp., Java, DISTANT, p. 277, t. c.
- Kamalata javanensis*, Java, DISTANT, p. 308, op. cit. xv, n. sp.
- Khimbya* n. g. type *Dundubia evanescens* Walk., DISTANT, p. 307, t. c.
- Kongota muiri*, Natal, DISTANT, p. 671, op. cit. xvi, n. sp.
- Koranna* n. g. *Parnisaria*, *analisis* n. sp., E. Africa, DISTANT, p. 207, t. c.
- Kumunga* n. g. type *Bacturia sandaracata* Dist., DISTANT, p. 215, t. c.
- Lahugada* n. g. type *Pomponia dohertyi* Dist., DISTANT, p. 304, op. cit. xv.
- Lahugadaria*, division defined, DISTANT, p. 304, t. c.
- Lemuriana* n. g. type *Cicada apicalis* Germ., p. 32, *L. flavocostata*, E. Africa, *sikora*, Madagascar, p. 33, n. spp., DISTANT, op. cit. xvi.
- Lethana* n. g. type *Cephaloxys locusta* Walk., DISTANT, p. 308, op. cit. xv.
- Majeorona* n. g. type *Fidicina aper* Walk., *M. bonilla* n. sp., Chapada, DISTANT, p. 318, t. c.
- Mapondera* n. g. type *Cicada pulchella* Stål, DISTANT, p. 212, op. cit. xvi.
- Mardalana* n. g. for *Cicada congrua* Walk. = (*Chlorocysta macrula* Stål), DISTANT, p. 215, t. c.
- Masupha dregei*, S. Africa, DISTANT, p. 208, t. c. n. sp.
- Maua* n. g. type *Cicada quadrituberculata* Sign., *M. affinis* n. sp., Borneo, DISTANT, p. 61, op. cit. xv.
- Meinuna* n. g. type *Dundubia tripurasura* Dist., DISTANT, p. 67, t. c.
- Melampsalta godingi*, Australia, *ethiopica*, Zomba, p. 270, *waterhousei*, *lactea*, p. 271, *isoides*, p. 272, Australia, DISTANT, op. cit. xvi, n. spp.
- Miranha* n. g. type *Zammara imbellis* Walk., DISTANT, p. 381, op. cit. xv.
- Mogannia cesar*, pl. 21, fig. 4, p. 433, JACOBI, Zool. Jahrb. Syst. xxi.
- M. mandarina*, Hong Kong, p. 385, *horsfieldi*, Java, p. 386, DISTANT, Ann. Nat. Hist. (7) xv, n. spp.
- Monomatapa socotrana*, Socotra, DISTANT, p. 31, op. cit. xvi, n. sp.
- Munza revoli*, Somaliland, DISTANT, p. 192, pl. xi, fig. 5, Tr. ent. Soc. London 1905, n. sp.
- Mura* n. g. *Tibiceninae*, *elegantula* n. sp., Panama, DISTANT, p. 144, Biol. Centr.-Amer. Homopt. i.
- Nelcynda madagascariensis*, Madagascar, DISTANT, p. 35, Ann. Nat. Hist. (7) xvi, n. sp.
- Odopæu perspicua*, São Thomé, DISTANT, p. 380, op. cit. xv, n. sp.
- Okinagana* n. g. type *Cicada rimosa* Say, DISTANT, p. 23, op. cit. xvi.
- Ollanta* n. g. type *mexicana* Dist., DISTANT, p. 313, op. cit. xv.
- O. mexicana*, Atoyac., DISTANT, p. 141, Biol. Centr.-Amer. Homopt. i, n. sp.
- Oncotympana virescens*, Tibet, DISTANT, p. 201, Tr. ent. Soc. London 1905 ; *O. fuscata*, N. China, p. 558, *stratoria*, Yunnan, p. 559, DISTANT, Ann. Nat. Hist. (7) xvi : n. spp.
- Orapa* n. g. type *Pycna numa* Dist., DISTANT, p. 480, op. cit. xv.
- Orellana* n. g. type *Zammara columbia* Dist., p. 381, *O. brevis* n. sp., Colombia, p. 382, DISTANT, t. c.
- Pacarina* n. g. type *Cicada signifera* Walk., DISTANT, p. 314, t. c. ; *P. schumannii*, Mexico, DISTANT, p. 142, Biol. Centr.-Amer. Homopt. i : n. sp.
- Paharia* n. g. type *Cephaloxys lacteipennis* Walk., DISTANT, p. 25, Ann. Nat. Hist. (7) xvi.
- Panka* n. g. type *simulata* Dist. = (*Tibicen nubifurca* Dist.), p. 34, *P. africana* n. sp., Fernando Po, p. 35, DISTANT, t. c.

- Parakalla* n. g. type *Tibicen mulleri* Dist., DISTANT, p. 29, t. c.
Parvitya n. g. near *Graptotettix*, p. 482, *samura* n. sp., Philippines, p. 483, DISTANT, op. cit. xv.
Pauropsalta stigmatica, dameli, Australia, DISTANT, p. 273, op. cit. xvi, n. spp.
Platylomia Stål recharacterised, *assamensis*, Assam, p. 65, *virescens*, Borneo, *albomaculata*, Philippines, p. 66, DISTANT, op. cit. xv; *P. juno*, p. 200, *diana*, p. 201, Ta-taien-low, DISTANT, Tr. ent. Soc. London 1905 : n. spp.
Platypleura attenuata, Nigeria, DISTANT, p. 554, Ann. Nat. Hist. (7) xvi; *P. spicata*, Madagascar, p. 192, *seraphina*, p. 193, *esa*, p. 194, Africa, DISTANT, Tr. ent. Soc. London 1905; *P. lineatella*, Sunda Ida., *indiana*, E. Africa, p. 668, *murchisoni*, Transvaal, p. 669, *ridleyana*, Malacca, *harmandi*, Cochin China, p. 670, DISTANT, Ann. Nat. Hist. (7) xvi; *P. vitreolimbata*, Banguey, BREDDIN, p. 218, Mt. Mus. Hamburg xxii : n. spp.
Plautillaria; n. div., *Plautilla* Stål, characters, DISTANT, p. 563, Ann. Nat. Hist. (7) xvi.
Pomponia piceata, Tonkin, DISTANT, p. 558, t. c.; *P. merula*, Borneo, *intermedia*, Tenasserim, DISTANT, p. 68, op. cit. xv, n. spp.
Proarna germari n. n. for *Cicada grisea* Germ., DISTANT, p. 140, Biol. Centr.-Amer. Homopt. i.
P. insignis, Centr. and S. America = (*albida* var. *insignis*), id. p. 141; *P. heidemannii*, p. 311, *bufo*, p. 312, Argentina, DISTANT, Ann. Nat. Hist. (7) xv : n. spp.
Purana n. g. type *Dundubia tigrina*, DISTANT, p. 60, t. c.; *P. davidi*, Kiang-Si, *pigmentata*, Siam, DISTANT, p. 555, op. cit. xvi, n. spp.
Pycna natalensis, Natal, DISTANT, p. 197, pl. xi, fig. 4, Tr. ent. Soc. London 1905, n. sp.
Quesada n. g. type *Cicada gigas* Ol., DISTANT, p. 478, Ann. Nat. Hist. (7) xv.
Quintilia souliei, Yunnan, DISTANT, p. 561, op. cit. xvi; *Q. mogannia*, China, *maculiventris*, Transvaal, DISTANT, p. 205, t. c. n. spp.
Rihana martini, nova, Madagascar, DISTANT, p. 198, Tr. ent. Soc. London 1905, n. spp.
Sadaka hyalina, W. Africa, DISTANT, p. 191, t. c. n. sp.
Sapantanga n. g. type *Cephaloxys nutans* Walk., DISTANT, p. 276, Ann. Nat. Hist. (7) xvi.
Sawda n. g. type *Cosmopsaltria mimica* Dist., *S. gestrosi* n. sp., New Guinea, DISTANT, p. 63, op. cit. xv; *S. pratti*, p. 556, *sharpi*, p. 557, New Guinea, DISTANT, op. cit. xvi, n. spp.
Sena n. g. type *Cicada quarula* Pall., DISTANT, p. 307, op. cit. xv.
Stagira darwini, Mauritius, DISTANT, p. 213, op. cit. xvi, n. sp.
Taipinga n. g. type *Cicada nana* Walk., DISTANT, p. 210, t. c.
Talainga distanti, pl. 21, fig. 3, p. 432, JACOBI, Zool. Jahrb. Syst. xxi.
Tamasa n. g. type *Cicada tristigma* Germ., DISTANT, p. 386, Ann. Nat. Hist. (7) xv.
Tanna n. g. type *Pomponia japonensis*, DISTANT, p. 62, t. c.
Terpnosia confusa, India, DISTANT, p. 306, t. c. n. sp.
Tibicen reductus, pl. 21, fig. 5, p. 434, JACOBI, Zool. Jahrb. Syst. xxi.
T. dahli, Bismarck Arch., KÜHLGATZ, p. 77, pl. iii, figg. 10 & 13, Mt. Mus. Berlin iii, n. sp.
Tibicina chinensis, N. China, DISTANT, p. 23, Ann. Nat. Hist. (7) xvi, n. sp.
Trimarcha atrata, Congo, *angolensis*, Angola, DISTANT, p. 30, t. c. n. spp.
Tympanoterpes alboapicata, Argentina, DISTANT, p. 313, op. cit. xv, n. sp.
Ueana n. g. type *Cicada lifuana* Montr., DISTANT, p. 28, op. cit. xvi; *U. harmonia*, pl. xvii, fig. 1, *polymnia*, fig. 2, Lifu, KIRKALDY, p. 329, Tr. ent. Soc. London 1905, n. spp.

- Umjada alluaudi*, Madagascar, DISTANT, p. 196, pl. xi, fig. 1, Tr. ent. Soc. London 1905, n. sp.
Urabunana n. g. *Tibicininae*, *segmentaria* n. sp., Queensland, DISTANT, p. 274, Ann. Nat. Hist. (7) xvi.
Xosopsaltria fuliginosa, E. Africa, DISTANT, p. 206, t. c. n. sp.
Yanga bouvieri, p. 194, pl. xi, fig. 2, *grandidieri*, p. 195, fig. 3, Madagascar, DISTANT, Tr. ent. Soc. London 1905, n. spp.

FULGORIDÆ.

- [Cf. BALL (69), BREDDIN (181), DISTANT (429, 430, 670), FOWLER (670), HORVÁTH (775), JACOBI (806), KIRKALDY (856), LESNE (941, 944), MELICHAR (1029, 1030), OSBORN (1125), ROUBAL (1308), SCHMIDT (1332, 1333), TOROK (1501).]
- Achaemenes niger*, Usambara, MELICHAR, p. 283, Wien. ent. Zeit. xxiv, n. sp.
Acmonia ? *sanguinalis*, Mexico, pl. xiii, fig. 24, DISTANT, p. 145, Biol. Centr.-Amer. Homopt. i, n. sp.
Acroephia crepusculascens, pl. xiii, fig. 25, *montezuma*, p. 144, *simillima*, *australis*, fig. 27, p. 145, DISTANT, t. c. n. spp.
Anecphora minor, p. 369, *olivacea*, *sanguineopunctata*, p. 370, *sanguinea*, p. 371, W. Africa, SCHMIDT, Stettin Ent. Zeit. lvi, n. spp.
Anigrus fuscomaculatus, E. Africa, MELICHAR, p. 284, Wien. ent. Zeit. xxiv, n. sp.
Aphena bimaculata, Sumatra, SCHMIDT, p. 376, Stettin Ent. Zeit. lvi, n. sp.
Aseigeia longiceps, E. Africa, MELICHAR, p. 281, Wien. ent. Zeit. xxiv, n. sp.
Bladina fuscovenosa Stål, SCHMIDT, p. 183, Stettin Ent. Zeit. lvi.
Colpoptera sinuata Burm. = (*marginalis* Burm.), p. 129, figure, pl. xii, fig. 32, FOWLER, Biol. Centr.-Amer. Homopt. i.
Copicerus irroratus, pl. xiii, figg. 1, 2, synonymy, p. 130, FOWLER, t. c.
Corethura iocnemis, p. 437, pl. xxi, fig. 6, *impunctata*, p. 438, fig. 7, JACOBI, Zool. Jahrb. Syst. xxi, n. spp.
Cyphopterum, defined, *Hysteropterum fauveli*, and *Issus retusus* referred to it, MELICHAR, pp. 476-477, Ann. Mus. Hungar. iii.
Delphax (Areopus) dorsata, E. Africa, MELICHAR, p. 286, Wien. ent. Zeit. xxiv, n. sp.
Dicranotropis lunaris, E. Africa, MELICHAR, p. 286, t. c. n. sp.
Epibidia n. g. *Delphacidae*, *godmani*, pl. xiii, figg. 3-5, p. 131, *brunnea*, fig. 6, p. 132, n. spp., Panama, FOWLER, Biol. Centr.-Amer. Homopt. i.
Episcus bolivianus, Bolivia, DISTANT, p. 673, Ann. Nat. Hist. (7) xvi, n. sp.
Eodelphax serendiba = (*Eudelphax setulosus* Mel.), KIRKALDY, p. 266, Wien. ent. Zeit. xxiv.
Fulgora basinigra, Borneo, p. 345, *erecta*, Java, p. 346, *dohrni*, Sumatra, p. 347, *heringi*, p. 351, *bicolor*, p. 355, Borneo, *cardinalis*, Tonkin, p. 356, SCHMIDT, Stettin Ent. Zeit. lvi; *F. siderea*, Borneo, p. 566, *evanescens*, Nias, p. 567, DISTANT, Ann. Nat. Hist. (7) xvi: n. spp.
Goniolcium n. g. *Delphacidae*, *granulosum*, pl. xiii, figg. 7, 8, p. 132, *testaceum*, fig. 9, p. 133, n. spp., Centr. America, FOWLER, Biol. Centr.-Amer. Homopt. i.
Hajar n. g. near *Tarundia*, p. 335, *fornicatus* n. sp., New Britain, p. 336, KIRKALDY, Tr. ent. Soc. London 1905.
Helicopteru kurazeki, E. Africa, MELICHAR, p. 285, Wien. ent. Zeit. xxiv, n. sp.
Holodictya karschi, E. Africa, SCHMIDT, p. 375, Stettin Ent. Zeit. lvi, n. sp.
Itzalana n. g. near *Acmonia*, *formosa* n. sp., Mexico, pl. xiii, fig. 23,

- DISTANT, p. 146, Biol. Centr.-Amer. Homopt. i; *I. submaculata*, Surinam, SCHMIDT, p. 377, Stettin Ent. Zeit. lvi, **n. sp.**
- Lagoana n. g.* near *Lyncides*, *bipunctata*, Delagoa Bay, p. 473, *longiceps*, E. Africa, p. 474, **n. spp.**, MELICHAR, Ann. Mus. Hungar. iii.
- Lamenia lactea*, p. 284, *angustifrons*, p. 285, E. Africa, MELICHAR, Wien. ent. Zeit. xxiv, **n. spp.**
- Liburnia seminigra*, E. Africa, MELICHAR, p. 286, Wien. ent. Zeit. xxiv; *L. atrior*, pl. xiii, figg. 10, 11, *basifuscata*, fig. 12, p. 134, *teupa*, fig. 13, *albolineosa*, fig. 14, *marginicornis*, fig. 15, p. 135, *apicimacula*, fig. 16, *sagata*, fig. 17, p. 136, *paludata*, fig. 18, p. 137, Central America, FOWLER, Biol. Centr.-Amer. Homopt. i: **n. spp.**
- Lichena incriminata*, Madagascar, SCHMIDT, p. 380, Stettin Ent. Zeit. lvi, **n. sp.**
- Malfeytia n. g.* near *Anecphora*, *flavopunctata n. sp.*, Congo, SCHMIDT, p. 366, t. c.
- Megamelanus elongatus*, Florida, p. 118, *rufivittatus*, Thompsonville, p. 119, BALL, P. Soc. Washington xviii; *M. spurtini*, N. America, OSBORN, p. 375, Ohio Natural. v: **n. spp.**
- Megamelus angulatus*, Pennsylvania, OSBORN, p. 374, t. c. **n. sp.**
- Metaphena n. g.* type *Aphana novemmaculata* Dist., p. 360, *basirufa*, *tricolor*, p. 363, **n. spp.**, Africa, SCHMIDT, Stettin Ent. Zeit. lvi.
- Nogodina fruhstorferi*, Java, SCHMIDT, p. 186, t. c. **n. sp.**
- Oecleus snowi*, Arizona, BALL, p. 117, P. Soc. Washington xviii, **n. sp.**
- Oliarus latus*, p. 281, *vitreus*, *frontalis*, p. 282, E. Africa, MELICHAR, Wien. ent. Zeit. xxiv; *O. musca*, Banguey, BREDDIN, p. 224, Mt. Mus. Hamburg xxii: **n. spp.**
- Ommatidiotus*, monograph, HORVÁTH, pp. 378, 387, Ann. Mus. Hungar. iii.
- O. acutus*, Mongolia, *iranicus*, Persia, p. 380, *riduus*, Syria, p. 381, *concinus*, Hungary, p. 383, HORVÁTH, t. c. **n. sp.**
- Ormenis suturalis*, E. Africa, MELICHAR, p. 289, Wien. ent. Zeit. xxiv, **n. sp.**
- Peggoga n. g.* near *Dictyophara*, *formosa n. sp.*, Lifu, pl. xvii, fig. 6, KIRKALDY, p. 336, Tr. ent. Soc. London 1905.
- Phantiopsis n. g.* *Flatida*, p. 474, *australiaca n. sp.*, Sydney, p. 475, MELICHAR, Ann. Mus. Hungar. iii.
- Phrictus hoffmannsi*, Chanchamayo, p. 338, *mabiusi*, Antioquia, p. 340, SCHMIDT, Stettin Ent. Zeit. lvi; *P. auromaculatus*, Bolivia, DISTANT, p. 672, Ann. Nat. Hist. (7) xvi: **n. spp.**
- Phyllyphanta birara*, New Britain, KIRKALDY, p. 335, Tr. ent. Soc. London 1905, **n. sp.**
- Phymus usambura*, E. Africa, MELICHAR, p. 289, Wien. ent. Zeit. xxiv, **n. sp.**
- Picumna varians*, pl. xii, fig. 28, *ovatipennis*, figg. 29, 30, FOWLER, p. 128, Biol. Centr.-Amer. Homopt. i.
- P. venosa*, Mexico, pl. xii, fig. 31, p. 128, FOWLER, t. c. **n. sp.**
- Publicia pallidoconspersa*, Mexico, DISTANT, p. 145, pl. xiii, fig. 26, Biol. Centr.-Amer. Homopt. i, **n. sp.**
- Pochazia dohrni*, Sumatra, SCHMIDT, p. 169, Stettin Ent. Zeit. lvi, **n. sp.**
- Pochazoides conspersus*, E. Africa, MELICHAR, p. 287, Wien. ent. Zeit. xxiv; *P. schoutedeni*, p. 196, *quinquemaculatus*, p. 197, E. Africa, SCHMIDT, Stettin Ent. Zeit. lvi: **n. spp.**
- Pristiopsis n. g.* for *Fulgora serrata* Fabr., SCHMIDT, p. 332, t. c.
- Prokelisia n. g.* *setigera n. sp.*, N. America, OSBORN, p. 373, Ohio Natural. v.
- Pyrops rendalli*, Zomba, *pulmunculus*, p. 564, *tapirus*, Java, *dalyi*, Siam, p. 565, DISTANT, Ann. Nat. Hist. (7) xvi, **n. spp.**
- Rhotala ambigua*, Panama, pl. xiii, figg. 19, 20, p. 138, FOWLER, Biol. Centr.-Amer. Homopt. i, **n. sp.**
- Ricania karaseki*, Usambara, MELICHAR, p. 287, Wien. ent. Zeit. xxiv;

- R. biteniata*, Borneo, p. 174, *lurida*, Java, p. 176, *quinquepunctata*, E. Africa, p. 195, SCHMIDT, Stettin Ent. Zeit. lvi : **n. spp.**
- Ricanopsis unipunctata*, Cameroons, SCHMIDT, p. 177, t. c. **n. sp.**
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- Leptonema agraphum* Kol., pl. i, fig. 44, pl. ii, figg. 45-47, p. 55, *albivirens* Walk., pl. ii, figg. 48, 49, pl. iii, fig. 102, p. 56, *speciosum* Burm., pl. ii, figg. 56-59, p. 62, ULMER, Stettin Ent. Zeit. lvi.
- L. affine*, Madagascar, ULMER, p. 27, Ann. Soc. ent. Belgique 1905; *L. madagascariense*, Madagascar, ULMER, p. 81, Ann. Hofmus. Wien xx; *L. furcatum*, pl. ii, figg. 50, 51, p. 57, *crassum*, figg. 52, 53, p. 58, *stigmaosum*, pl. iii, fig. 103, p. 60, *columbianum*, fig. 104, p. 61, *cinctum*, fig. 105, p. 64, S. America, ULMER, Stettin Ent. Zeit. lvi : n. spp.
- Limnophilus suchensis*, pl. i, figg. 2, 3, ULMER, p. 7, t. c.

- L. amurensis*, Amur land, pl. i, figg. 4, 5, p. 8, *appendix*, Centr. Asia, pl. figg. 6, 7, ULMER, t. c.; *L. meridionalis*, Patagonia, ULMER, p. 12, Ann. Soc. ent. Belgique 1905 : n. spp.
- Macronematina*, table of genera, ULMER, p. 88, Ann. Hofmus. Wien x.
- Macronema aculeata*, type, not a *Macr.*, ULMER, p. 17, Ann. Soc. ent. Belgique 1905; *M. excisum* ♂, ULMER, p. 29, t. c.; *M. sp.*, lra THIENEMANN, pp. 289-291, Zeitschr. Insbiol. i; *M. chalybeum* Hg. p. 83, fig. 53, *lineatum* Pict., p. 86, fig. 56, ULMER, Ann. Hofm. Wien xx; *M. hyalinum* Pict., pl. ii, figg. 60-62, p. 67, *fasciatum* Hg. p. 72, *auripennis* Ramb., pl. ii, figg. 68-71, p. 81, *oculatum* Walk. pl. i fig. 72, p. 84, ULMER, Stettin Ent. Zeit. lxvi.
- M. tuberosum*, Brazil, p. 82, fig. 51, *opulentum*, Ceylon, p. 84, fig. 52, *santuerike*, p. 85, fig. 55, Brazil, ULMER, Ann. Hofmus. Wien xi; *M. dubium*, Australia, p. 28, *madagascariense*, Madagascar, p. 31, ULMER, Ann. Soc. ent. Belgique 1905; *M. dohrni*, pl. ii, fig. 63, p. 68, *distinguendum*, p. 71, Sumatra, *parrum*, pl. iii, fig. 107, p. 73, *hiale*, pl. iv, figg. 109, 110, p. 75, *M. (Leptonema?) sparsum*, pl. ii, fig. 64, p. 76, *M. argentinum*, pl. iv, figg. 111-113, p. 77, *fulvum*, pl. i figg. 65-67, p. 78, *obscurum*, p. 83, *excisum*, pl. iv, fig. 114, p. 84, S. America, ULMER, Stettin Ent. Zeit. lxvi : n. spp.
- Marilia albicornis* Burm., pl. i, figg. 20-22, p. 24, *major* Müll., pl. i fig. 91, p. 25, ULMER, t. c.
- M. flexuosa*, Santa Catharina, ULMER, p. 70, Ann. Hofmus. Wien xi, a sp.
- Molanna moesta*, Japan, BANKS, p. 110, P. ent. Soc. Washington vii, a sp.
- Noropsyche* n. g. *Limnophilides parvula* n. sp., Japan, BANKS, p. 108, t. c.
- Musarna*, the species, ULMER, p. 22, pl. i, fig. 19, Stettin Ent. Zeit. lxvi.
- Mysticides brasiliana* Br. to *Notantolica*, ULMER, p. 72, fig. 32, Ann. Hofmus. Wien xi.
- Nemotaulius* n. g. type *Gr. brevilinea* McL., BANKS, p. 107, P. ent. Soc. Washington vii.
- Neotrichia* n. g. *collata* n. sp., N. America, MORTON, p. 72, Bull. N. York Mus. lxxxvi.
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- Notunatolica*, larva, ULMER, p. 91, Mt. Mus. Hamburg xxii.
- Nothopsyche* n. g. for *Chilostigma ruficollis* Ulm., and *N. pallipes* n. sp., Japan, BANKS, p. 107, P. ent. Soc. Washington vii.
- Notidobius distincta*, Maine, ULMER, p. 67, figg. 21-23, Ann. Hofmus. Wien xx, n. sp.
- Notiopsyche latipennis*, N. Carolina, BANKS, p. 216, Bull. Amer. Mus. xi, n. sp.
- Odontocerinae*, table of genera, ULMER, p. 72, Ann. Hofmus. Wien xx.
- Odontocerum japonicum*, Gifu, BANKS, p. 110, P. ent. Soc. Washington vii, n. sp.
- Oestropsis fuscus*, Sumatra, pl. iii, fig. 96, p. 42, ULMER, Stettin Ent. Zeit. lxvi, n. sp.
- Oligophlebodes* n. g. *Limnophilides coloradensis* n. sp., N. America, ULMER, p. 66, Ann. Hofmus. Wien xx.
- Orthotrichia bruchiata*, New York, MORTON, p. 70, Bull. N. York Mus. lxxxvi, n. sp.
- Oryethirus coarctatus*, p. 70, *viminalis*, *dualis*, p. 71, N. America, MORTON, t. c. n. spp.
- Perisomacrus paradoxa* McLachl., pl. i, figg. 14, 15, p. 19, ULMER, Stettin Ent. Zeit. lxvi.
- P. similis japonica*, Japan, BANKS, p. 109, P. ent. Soc. Washington vii, n. spp.
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- Phylloicus*, p. 77, fig. 45, *aneus* Hag., p. 79, fig. 49, ULMER, Ann. Hofmus. Wien xx.
- P. angustior*, Brazil, p. 78, figg. 46-48, ULMER, t. c. n. sp.
- Platycentropus* n. g. for *Halesus maculipennis* Kol., ULMER, p. 13, Stettin Ent. Zeit. lxi.
- Platyphylax nigrovittatus* queried, ULMER, p. 20, Ann. Soc. ent. Belgique 1905; *P. designatus*, repair of cases after injury, MARSHALL & VORHIES, pp. 232-244, Biol. Bull. ix.
- Plectrocnemia aurea*, Sikkim, pl. iv, figg. 130, 131, p. 101, ULMER, Stettin Ent. Zeit. lxi; *P. auriceps*, N. Carolina, BANKS, p. 218, Bull. Amer. Mus. xxi : n. spp.
- Polycentropus carolinensis*, N. Carolina, BANKS, p. 217, t. c. n. sp.
- Polymorphanius* Walk. = (*Estropsis* Brauer), ULMER, p. 24, Ann. Soc. ent. Belgique 1905.
- Polyplectropus* n. g. *Polycentropina*, *flavicornis* n. sp., Sta. Catharina, ULMER, p. 103, pl. iv, figg. 132-135, Stettin Ent. Zeit. lxi; *P. annulicornis*, Brazil, fig. 64, *javanicus*, Java, figg. 65-67, ULMER, p. 91, Ann. Hofmus. Wien xx : n. spp.
- Protomacronema hyalinum*, ULMER, p. 26, Bull. Soc. ent. Belgique 1905.
- P. splendens*, Gaboon, pl. iii, fig. 106, p. 65, ULMER, Stettin Ent. Zeit. lxi, n. sp.
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- Pseudosetodes* n. g. near *Setodes*, p. 76, figg. 44, *punctipennis* n. sp., Brazil, p. 77, ULMER, Ann. Hofmus. Wien xx.
- Ptilochorema indicum*, India, ULMER, p. 39, Ann. Soc. ent. Belgique 1905; *P. longipenne* (no locality), pl. iv, figg. 144-146, p. 110, ULMER, Stettin Ent. Zeit. lxi : n. spp.
- Rhabdoceras* n. g. *Leptoceridae*, p. 31, *japonicum*, Japan, n. sp., p. 32, ULMER, t. c.
- Rhyacophila tristis*, *aquitania*, *philopotamoides*, larvae, THIENEMANN, pp. 285-287, Zeitschr. Insbiol. i.
- R. maculipennis*, Kuku-Nor., pl. ii, figg. 80, 81, p. 108, ULMER, Stettin Ent. Zeit. lxi; *R. arcisa*, Moupin, ULMER, p. 37, Ann. Soc. ent. Belgique 1905 : n. spp.
- Rhyacophylax columbianus*, pl. iv, figg. 138-140, p. 108, *brasiliannus*, figg. 141-143, p. 108, S. America, ULMER, Stettin Ent. Zeit. lxi, n. spp.
- Rhyacopsyche hageni*, metamorphoses, THIENEMANN, pp. 287-289, Zeitschr. Insbiol. i.
- Setodes brunnea*, Java, ULMER, p. 90, Mt. Mus. Hamburg xxii, n. sp.
- Smicridea nivea* Billopp., pl. iv, figg. 136, 137, p. 104, ULMER, Stettin Ent. Zeit. lxi, n. sp.
- Stenophylax latus*, Centr. Asia, pl. i, fig. 8, ULMER, p. 11, t. c. n. sp.
- Synagapetus ater*, Transsylvania, Klapálek, p. 729, Vestník Ceske Ak. xiii, n. sp.
- Synaestropsis* n. g. near *Estropsis*, *pedicillata*, pl. iii, figg. 97-100, p. 43, *obliqua*, fig. 101, p. 45, *punctipennis*, pl. i, fig. 34, p. 47, n. spp., S. America, ULMER, Stettin Ent. Zeit. lxi.
- Tetanonema* n. g. near *Helicopsyche*, p. 17, *clarum* n. sp., Sta. Catharina, p. 18, ULMER, t. c.
- Trianodes albicornis*, Algiers, ULMER, p. 23, Ann. Soc. ent. Belgique 1905, n. sp.

Triplectides and *Notantolica*, ULMER, p. 71, Ann. Hofmus. Wien xx; *Triplectides*, p. 29, *T. gracilis* Burm., pl. i, figg. 23–25, p. 27, ULMER, Stettin Ent. Zeit. lxi.

Wormaldia mexicana, Mexico, p. 89, figg. 58–60, *parva*, Brazil, p. 90, figg. 61–63, ULMER, Ann. Hofmus. Wien xx, n. spp.

NEUROPTERA-PLANIPENNIA (incl. PANORPIDÆ).

[Cf. BAKER (64), BANKS (71), CURRIE (383), DZIĘDZIELEWICZA (485), ENDERLEIN (512, 514), KŁAPÁLEK (868), NAVÁS (1084, 1085), NEEDHAM (1092), TERRY (1475), VAN DER WEELE (1595).]

ENDERLEIN in Zool. Anz. xxix, pp. 225–227, sketches his paper on *Coniopterygides* and proposes and tabulates the new generic names.

Ancylopteryx butnikoferi, Liberia, VAN DER WEELE, Notes Leyden Mus. xiv, p. 166, n. sp.

Ascalaphus kheili, Japan, NAVÁS, p. 49, pl. ii, fig. 1, Bol. Soc. Aragon. iv, n. sp.

Berotha occidentalis, Nevada, BANKS, p. 89, Invert. pacif. i, n. sp.

Brachynemurus irregularis, Texas, CURRIE, p. 186, P. ent. Soc. Washington 1905, n. sp.

Chrysopa microphya, early stages, TERRY, p. 175, pl. x, figg. 1–3, Bull. exp. Stat. Hawaii i.

C. marginalis, Spain, NAVÁS, p. 122, Bol. Soc. Aragon. iv, n. sp.

Coniopterygida of Silesia, monograph, in Polish, DZIĘDZIELEWICZA, pp. 377–385, 1 plate, Kosmos polski. xxx.

Glenurus pupillatus, Himalaya, NAVÁS, p. 54, pl. ii, fig. 4, Bol. Soc. Aragon. iv, n. sp.

Hemerobius striatellus, Transsylvania, KŁAPÁLEK, p. 725, Vestnik Ceske Ak. xiii, n. sp.

Mantipa rugicollis, Himalaya, NAVÁS, p. 54, Bol. Soc. Aragon. iv, n. sp.

Megalomus minor, Nicaragua, BANKS, p. 90, Invert. pacif. i, n. sp.

Micromus jonas, New York, NEEDHAM, p. 15, Bull. N. York Mus. lxxvi, p. 15, n. sp.

Myrmeleon ocreatus, characters, NAVÁS, p. 112, Bol. Soc. Aragon. iv.

Palmobius n. g. type *H. amicus* Fitch, NEEDHAM, p. 17, Bull. N. York Mus. lxxvi.

Panorpa pura, Transsylvania, KŁAPÁLEK, p. 727, Vestnik Ceske Ak. xiii; *P. carolinensis*, N. Carolina, BANKS, p. 216, Bull. Amer. Mus. xxi: n. spp.

Panorpodes carolinensis, N. Carolina, BANKS, p. 215, t. c. n. sp.

Parasemidalis n. g. *Coniopterygida*, p. 197, *anna* n. sp., Berlin, p. 198, ENDERLEIN, Wien. ent. Zeit. xxiv.

Semidalis n. g. for *Coniopteryx aleurodiformis* Steph., ENDERLEIN, p. 197, t. c.

Sisyra n. g. near *Sisyra pectinata* n. sp., Shanghai, NAVÁS, p. 51, pl. ii, fig. 2, Bol. Soc. Aragon. iv.

Spadobius n. g. type *H. occidentalis* Fitch, NEEDHAM, p. 16, Bull. N. York Mus. lxxvi.

PSEUDO-NEUROPTERA.

PSOCIDÆ.

[Cf. ENDERLEIN (497, 507, 513), RIBAGA (1263, 1264), SNODGRASS (1424).]

Revision of *Atropides* and *Troctides*, with table of the families of *Copeognatha*, ENDERLEIN, Jägerskiöld exp. No. 18, 51 pp.

SNODGRASS, pp. 300–302, describes and figures pl. viii, figg. 9–16, the mouth-parts of *Peripsocus californicus* and of *Troctes divinatorius*, compares them with *Mallophaga* and finds a morphological identity, Tr. Amer. ent. Soc. xxxi.

Parthenogenesis, *Ectopsocus*, RIBAGA, Redia ii, pp. 33–36.

Amphientotum, in amber, cf. Palæoentomology, p. 130.

Embidopsocus luteus Hag., ENDERLEIN, p. 51, fig. 11, Jägerskiöld exp. No. 18. *Embidotroctes* n. g. p. 48, *paradoxus* n. sp., Cameroona, p. 49, ENDERLEIN, t. c.

Lepidilla n. g. subfam. n. *Lepidillinae*, p. 99, *kelloggi* n. sp., California, p. 100, pl. ix, RIBAGA, Redia ii.

Lepinotus reticulatus, Cairo, ENDERLEIN, p. 31, Jägerskiöld exp. No. 18, n. sp.

Myopsocnema n. g. for *Clothilla annulata* Hag., ENDERLEIN, p. 17, t. c.

Pachytroctes n. g. *egyptius* n. sp., Cairo, ENDERLEIN, p. 46, figg. 9, 37–43, t. c.

Philotarsus falklandicus, Falkland Ids., ENDERLEIN, p. 126, Zool. Anz. xxix, n. sp.

Stenotroctes n. g. type *Troctes needhami*, with *S. virgatus* n. sp., S. America, p. 44, figg. 29, 31, 33, ENDERLEIN, Jägerskiöld exp. No. 18.

S. enderleini, Florence, RIBAGA, p. 106, pl. x, figg. 12–15, Redia ii, n. sp.

MALLOPHAGA.

[Cf. FULMEK (627), GROSS (699), SNODGRASS (1424).]

SNODGRASS describes, pp. 302–305, and figures, pl. viii, figg. 1–8, the mouth-parts of *Lamobothrium gypsis* and *Ancistrana gigas*, compares them with those of *Psocidæ* and finds them morphologically identical, Tr. Amer. ent. Soc. xxxi.

Structure of heart, FULMEK, Zool. Anz. xxix, pp. 619–621.

Bird-louse of *Cypselus affinis*, as intermediary host of *Filaria cypseli*, fig. pl. v, DUTTON, p. 139, Thompson Yates Lab. Rep. vi.

The ovaries of *Mallophaga*, and the affinities of the group, GROSS, Zool. Jahrb. Anat. xxii, pp. 347–386, pls. xi, xxi.

Eggs of “Pediculines” of birds, TEMPÈRE, Microgr. prep. xiii, p. 34, pl. iii, figg. 1–11.

TERMITIDÆ or ISOPTERA.

[Cf. BRUNELLI (203, 204), DESNEUX (401, 402), DOFLEIN (437), ROBINSON (1285), SJÖSTEDT (1404).]

Account of Australian *Termitidæ*, nests, economics, systematic, FROGGATT, Agric. Gaz. N. S. W. xvi, pp. 632–656, 753–774, plates and illustrations. Fungus-culture, building habits etc. *Termes obscuriceps*, DOFLEIN, pp. 140–149, Verh. Deutsch. zool. Ges. 1905.

Structure of ovary, and oogenesis, BRUNELLI (203).

Acanthotermes laticeps, Congo, SJÖSTEDT, p. 4, Arkiv Zool. ii, No. 16, n. sp.

Calotermes chilensis, valid sp., characters, DESNEUX, p. 337, Ann. Soc. ent. Belgique 1905; *C. adamsoni* Frogg. to *Porotermes*, DESNEUX, p. 360, Ann. Soc. ent. Belgique 1905; *C.* rendered infertile by *Protozoa*, BRUNELLI, pp. 718–721, Rend. Acc. Lincei xiv, ii.

C. papua, New Guinea, DESNEUX, p. 367, Ann. Mus. Hungar. iii, n. sp.

Eutermes rhinoceros, p. 11, *corniferus*, p. 12, *bycanistes*, p. 14, *lamunianus*, p. 15, *mandibularis*, p. 17, *mirandus*, p. 18, *bettonianus*, p. 19, Africa, SJÖSTEDT, Arkiv Zool. ii, No. 16, n. spp.

- Hodotermes macrocephalus*, Sind, DESSEUX, p. 344, Ann. Soc. ent. Belgique 1906; *H. pulcher*, Congo, SJÖSTEDT, p. 1, Arkiv Zool. ii, No. 16: n. spp.
Rhinotermes dimorphus, New Guinea, DESSEUX, p. 368, Ann. Mus. Hungar. iii, n. sp.
Termes gestroi, natural history, ROBISSEAU, J. Fed. Malay Mus. i, pp. 2-12; *T. tubiformans*, imago, p. 338, *tenuirostris*, imago, p. 341, *cinereus*, soldier, p. 342, *T. ripperti* subsp. n. *dendrophilus*, p. 357, *T. fatalis*, synonymy, with *königi* n. sp. (= *fatalis* Hag.), p. 360, *T. longirostris* Br. to *Rhinotermes*, p. 360, DESSEUX, Ann. Soc. ent. Belgique 1905.
T. apollo, E. Africa, SJÖSTEDT, p. 6, Arkiv Zool. ii, No. 16; *T. (Coptotermes) discus*, p. 369, *T. (Entermes) biroi*, p. 369, with subsp. *brevis*, p. 370, *odontomachus*, p. 371, *grallator*, p. 374, *princeps*, p. 375, *gracilirostris*, p. 376, New Guinea, DESSEUX, Ann. Mus. Hungar. iii; *T. wheeleri*, Texas, p. 340, *mycophagus*, p. 348, *belli*, p. 352, *indensis*, p. 354, *theobromæ*, Sao Thomé, p. 355, *hosei*, Sarawak, p. 356, DESSEUX, Ann. Soc. ent. Belgique 1905: n. spp.

EMBIIDÆ or EMBIOPTERA.

The spinning apparatus, RIMSKY-KORSAKOW, Zool. Anz. xxix, pp. 438-442. Abstract of Verhoeff's paper of last year, ADELUNG, Zool. Zentrbl. 1905, pp. 580-585.

- Embia ramburi*, Alpes-maritimes, RIMSKY-KORSAKOW, Zool. Anz. xxix, p. 434, n. sp.
Oligotoma gurneyi, habits, FROGGATT, p. 175, P. Linn. Soc. N. S. Wales xlii.

PERLIDÆ or PLECOPTERA.

[Cf. BAKER (64), BANKS (71, 73), ENDERLEIN (504), FROGGATT (615), KLAPÁLEK (865, 866, 868), NEEDHAM (1089), REUTER (1258), RIS (1270).]

- Amphineumura cinerea*, true ♀, RIS, p. 96, Mt. Schweiz. ent. Ges. xi.
Antarctoperla n. g. p. 810, *anderssoni*, p. 811, *fuergiana*, p. 813, n. spp., Tierra del Fuego, ENDERLEIN, Zool. Anz. xlviii.
Arcynopteryx n. g. for *D. compacta* McLachl. etc., KLAPÁLEK, p. 7, Rozp. Ceske Ak. Praze xlii, No. 17.
Atoperla n. g. type *Perla producta*, BANKS, p. 56, Psyche xii.
Austroperla n. g. for *Perla cyrene* NEWM., NEEDHAM, p. 109, P. Soc. Washington xviii.
Capnia vidua, Transsylvania, KLAPÁLEK, p. 723, Vestnik Ceske Ak. xlii, n. sp.
Capnioneura n. g. p. 94, *nemuroides* n. sp., Zurich, p. 95, RIS, Mt. Schweiz. ent. Ges. xi.
Dictyogenus subg. n. of *Isogenus* for *imhoffi* Pict. etc., KLAPÁLEK, p. 8, Rozp. Ceske Ak. Praze xlii, No. 17.
Dictyopterygellu subg. n. p. 5, with *D. septentrionis* n. sp., Siberia, p. 6, KLAPÁLEK, t. c.
Isogenus imhoffi, p. 3, *rubecula*, nymph, p. 8, cuts, KLAPÁLEK, t. c.
Leuctra antarctica, Tierra del Fuego, ENDERLEIN, p. 814, Zool. Anz. xlviii, n. sp.
Nemoura japonica, Kiushiu, NEEDHAM, p. 110, P. Soc. Washington xviii, n. sp.
Neoperla n. n. for *Pseudoperla* Banks, NEEDHAM, p. 108, t. c.; *N. pilosella*, Java, KLAPÁLEK, p. 103, Mt. Mus. Hamburg xxii: n. sp.
Peltoerla n. g. p. 107, *arcuata* n. sp., New York, p. 108, NEEDHAM, P. Soc. Washington xviii.

- Perla myrmidon* Mab. to *Gripopteryx*, ENDERLEIN, p. 814, Zool. Anz. xviii.
- P. tennina*, Japan, NEEDHAM, p. 109, P. Soc. Washington xviii; *P. attenuata*, p. 55, *kansensis*, p. 56, Kansas, BANKS, Psyche xii; *P. californica*, Claremont, BANKS, p. 87, Invert. pacif. i; *P. carolinensis*, N. Carolina, BANKS, p. 215, Bull. Amer. Mus. xxi: n. spp.
- Perlinella cinctipes*, Kansas, BANKS, p. 56, Psyche xii, n. sp.
- Tanionema* n. g. p. 56, *analís* n. sp. Colorado, p. 57, BANKS, t. c.
- Taniopteryx nebulosa*, appearance in hard weather, REUTER, Medd. Soc. Faun. Fenn. xxx, pp. 99, 100.
- T. tenuis*, Kiushiu, NEEDHAM, p. 110, P. Soc. Washington xviii, n. sp.

EPHEMERIDÆ OF EPHEMEROPTERA.

[Cf. KLAPÁLEK (866), NAVÁS (1085), NEEDHAM (1093), SEILER (1375).]

- Key to genera of N. American *Ephemeridæ*, NEEDHAM, pp. 22-26, and of the nymphs, pp. 26-28, pls. iv-xii, Bull. N. York Mus. lxxxvi. In this paper the nymphs of various N. American species are also described and figured.
- Investigation of structure and function of ocelli in five species, *Cloëon*, *Baëtis*, *Ephemerella*, *Heptagenia*, *Cænis*, SEILER, Zool. Jahrb. Anat. xxii, pp. 1-40, pls. 1, 2.
- Ameletes ludens*, New York, NEEDHAM, p. 36, Bull. N. York Mus. lxxxvi, n. sp.
- Cænis nigropunctata*, Java, KLAPÁLEK, p. 105, Mt. Mus. Hamburg xxii; *C. allecta*, New York, NEEDHAM, p. 47, Bull. N. York Mus. lxxxvi: n. spp.
- Chirotenetes albomanicatus*, N. York, NEEDHAM, p. 31, pls. 5, 6, t. c. n. sp.
- Cloëon virens*, Java, KLAPÁLEK, p. 106, Mt. Mus. Hamburg xxii, n. sp.
- Drunella* n. g. pp. 27, 42, for *Ephemerella grandis*?, NEEDHAM, Bull. N. York Mus. lxxxvi.
- Ephemerella bispina*, p. 43, *unicornis*, p. 45, Indiana, NEEDHAM, t. c. n. spp.
- Jolia roseli*, the supposed nymph is really *Chirotenetes ignotus*, NEEDHAM, p. 28, t. c.
- Polymitarcys albus*, nymph, HOWARD, p. 60, Bull. N. York Mus. lxxxvi.
- Pseudocloëon* n. g. *kraepelini* n. sp., Java, KLAPÁLEK, p. 105, Mt. Mus. Hamburg xxii, n. sp.
- Rhithrogena ferruginea*, Spain, NAVÁS, p. 123, Bol. Soc. Aragon. iv, n. sp.

ODONATA OF PARANEUROPTERA.

- [Cf. BRAUNER (172), CALVERT (670), EAST (486), EVANS (528), FORESTER (584), GADEAU (631), GEISSLER (648), KIRBY (851, 852), MORTON (1073), NEEDHAM (1090), OSBURN (1127), TILLYARD (1494, 1495), WILLIAMSON (1635).]
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- Proportions of the sexes in *Odonata*, TILLYARD, pp. 344-349, P. Linn. Soc. N. S. Wales xxx.
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- Odonata* near Edinbro, EVANS, P. Phys. Soc. Edinb. xvi, pp. 87-96.
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- Diplax striolata*, habits in captivity, JOHNSTON, p. 43, Irish Natural. 1905.
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- Erpetogomphus eutainia*, p. 162, pl. vii, figg. 24-27, 39, *ophibolus*, p. 163, figg. 30-32, 46, *sipidon*, p. 165, figg. 30, 40, 42, Mexico, *diadophis*, Texas, p. 167, pl. vii, figg. 35, 47, CALVERT, Biol. Centr.-Amer. Neuropt. n. spp.
- Gomphina*, the Centr.-American genera, CALVERT, pp. 146-148, t. c.
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- Heterogomphus naninus*, Tonkin, FOERSTER, p. 19, Wien. ent. Zeit. xxiv, n. sp.
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- Libellulina*, synopsis of Centr.-American genera, CALVERT, pp. 198-205, Biol. Centr.-Amer. Neuropt.
- Misthotus* n. g. near *Orthetrum*, *marshalli*, p. 192, *ambiguus*, p. 194, n. spp., S. Africa, KIRBY, Ann. Nat. Hist. (7) xv.
- Onychothemis notabilis*, Tonkin, KIRBY, p. 277, t. c. n. sp.
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THYSANOPTERA.

[Cf. ASHMEAD (37), HINDS (748), REUTER (1260).]

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- Idolothrips tibialis*, Manila, ASHMEAD, p. 20, Ent. News Philad. xvi, n. sp.
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(G.) *APTERA* or *THYSANURA* and
COLLEMBOLA.

THYSANURA.

[Cf. BOUVIER (162), ESCHERICH (525), HEYMONS (745), NAVAS (1065), VON OLFERS (1120), SILVESTRI (1394-1397), TEMPÈRE (1472), VERHOEFF (1539).]

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Eutrichocampa breviseta, Chile, SILVESTRI, p. 784, Zool. Jahrb. Suppl. vi, n. sp.

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Lepismima argentea, Spain, NAVÁS, p. 130, Bol. Soc. Aragon. iv; *L. persica*, Persia, p. 73, ESCHERICH, Zoologica xliii : n. spp.
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Procampodea n. g. p. 115, *brevicauda* n. sp., S. Italy, p. 117, pl. xii, SILVESTRI, t. c.
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COLLEMBOLA OR APONTOPTERA.

[Cf. AXELSON (49), BECKER (88), CARL & LEBEDINSKY (277), FRANKLIN (597), HOFFMANN (753), KRAUSBAUER (891), LEBEDINSKY (929).]

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Achorutes armatus var. n. *pallens*, KRAUSBAUER, p. 89, Ber. Oberhess. Ges. xviii; *A.*, 6 varr. n. from Finland, AXELSON, p. 788, Zool. Anz. xxviii.

A. frigidus, Finland, AXELSON, p. 788, t. c.; *A. assimilis*, Germany, KRAUSBAUER, p. 88, Ber. Oberhess. Ges. xviii : n. spp.

Entomobrya marginata var. n. *pallida*, KRAUSBAUER, p. 75, t. c.

E. superba, Germany, KRAUSBAUER, p. 75, t. c.; *E. albicollis*, Massachusetts, FRANKLIN, p. 77, Ent. News Philad. xvi : n. spp.

Isotoma fmeturia var. n. *caldaria*, AXELSON, p. 790, Zool. Anz. xxviii.

I. borealis, angularis, Finland, AXELSON, p. 791, t. c.; *I. schaefferi*, Germany, KRAUSBAUER, p. 70, Ber. Oberhess. Ges. xviii : n. spp.

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Neanura coronifera, p. 789, *reticulata*, p. 790, Finland, AXELSON, Zool. Anz. xxviii, n. spp.

Papirius minutus varr. n. pp. 59, 60, KRAUSBAUER, Ber. Oberhess. Ges. xviii.

P. violaceus, p. 61, *setosus*, p. 63, Germany, KRAUSBAUER, t. c. n. spp.

Pseudachorutes dubius, Germany, KRAUSBAUER, p. 94, t. c. n. sp.

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S. quinquefasciatus, p. 42, *pumilis*, p. 47, *signatus*, p. 52, *parvulus*, p. 53, *assimilis*, p. 54, Germany, KRAUSBAUER, t. c. n. spp.

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- Labidura mongolica*, Pekin, REHN, p. 503, P. U. S. Mus. xxix, n. sp.
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- Sparatta incerta*, Paraguay, BORELLI, p. 11, Boll. Mus. Torino xx, No. 516, n. sp.
- Sphingolabis semifulva* Borm., *furcifera* is the ♀, BURR, p. 495, Ann. Nat. Hist. (7) xvi.
- Spongophora apicidentata*, Arizona, CAUDELL, p. 461, P. U. S. Mus. xxviii; *S. bertonii*, p. 5, *confusa*, p. 6, Paraguay, BORELLI, Boll. Mus. Torino xx, No. 516: n. spp.

BLATTIDÆ and HEMIMERIDÆ.

- [Cf. ADELUNG (8), BOLIVAR (128), CAUDELL (288, 293, 294), REHN (1239).]
Notes on Kirby's Catalogue, with list of omitted genera and species, CAUDELL, pp. 85–88, P. ent. Soc. Washington vii.
- Anaplecta abortiva*, Brownsville, CAUDELL, p. 105, Bull. Brooklyn Inst. i, n. sp.
- Attaphila aptera*, Colombia, *sexdentis*, Brazil, p. 137, *schuppi*, Porto Alegre, p. 138, BOLIVAR, Mt. Schweiz. ent. Ges. xi, n. spp.
- Atticola* n. g. *Corydiens* l, p. 140, *mortoni* n. sp., San Leopoldo, in nests of *Camponotus*, p. 141, BOLIVAR, t. c.
- Blaberus biolleyi*, Costa Rica, REHN, p. 792, P. Ac. Philad. 1905, n. sp.
- Blatta scioana*, p. 421, *B. (Phyllodromia) desertorum*, p. 424, E. Africa, ADELUNG, Annuaire Mus. St. Petersb. ix, n. spp.
- Ceratinoptera bolivari*, Galla land, ADELUNG, p. 431, t. c. n. sp.
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- Hemimerus talpoides*, habits, MACLAUD, p. 174, Bull. Soc. ent. France 1905.
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- Nothoblatta* n. g. p. 139, *N. wasmanni* n. sp., San Leopoldo, in nests of *Camponotus*, p. 140, BOLIVAR, Mt. Schweiz. ent. Ges. xi.
- Oxyhaloa lukjanovi*, Abyssinia, ADELUNG, p. 467, Annuaire Mus. St. Petersb. ix, n. sp.
- Phorticolea* n. g. *Ectobiena*, p. 138, *testacea* n. sp., Rio Grande do Sul, p. 139, BOLIVAR, Mt. Schweiz. ent. Ges. xi.
- Pseudoderopeltis conspersipennis*, p. 448, *spectabilis*, p. 451, Abyssinia, ADELUNG, Annuaire Mus. St. Petersb. ix, n. spp.
- Stylopyga flavilatera* ♂, ADELUNG, p. 439, t. c.
- Temnopteryx brunneri*, Abyssinia, ADELUNG, p. 433, t. c. n. sp.

MANTIDÆ.

[Cf. TEPPER (1473), WERNER (1615).]

- Brunneria borealis*, pl. iii, fig. 3, p. 82, CAUDELL, J. N. York Ent. Soc. xiii.
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Eremiaphila tunetana, Tunis, *heluanensis*, *pyramidum*, Egypt, WERNER, p. 405, t. c. n. spp.
Fischeria quinquelobata, Centr. Australia, TEPPER, p. 238, Tr. R. Soc. S. Austral. xxix, n. sp.
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PHASMIDÆ.

[Cf. BAKER (63), CAUDELL (291, 292, 294), FROGGATT (614), KIRBY (853), LEA (927), REHN (1239), TEPPER (1473).]

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GRYLLIDÆ.

[Cf. BAKER (63), BOLÍVAR (133), CSIKI (379), HANCOCK (720), MORSE (1072), REHN (1239), REHN & HEBARD (1242), VIEHMAYER (1548), VOSS (1555), WASMANN (1588).]

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- Ageneotettix australis*, Arizona, BRUNER, p. 110, Biol. Centr.-Amer. Orthopt. ii, n. sp.
- Algete* n. g. *Atractomorphinae*, p. 213, *brunneri* n. sp., Pernambuco, p. 214, BOLÍVAR, Bol. Soc. espan. v.
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- Aptenopedes clara*, variation, REHN, p. 41, t. c.
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- Arphia*, table of species, BRUNER, pp. 119–123, Biol. Centr.-Amer. Orthopt. ii.
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- Aulocara brevipenne*, Mexico, BRUNER, p. 111, Biol. Centr.-Amer. Orthopt. ii, n. sp.
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- Colpolopha bruneri*, Costa Rica, REHN, p. 406, t. c. n. sp.
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- Dichroplus morosus* ♂, REHN, p. 805, P. Ac. Philad. 1905.
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- Heliastus benjamini*, Arizona, CAUDELL, p. 474, P. U. S. Mus. xxviii; *H. costariensis*, Costa Rica, REHN, p. 402, P. Ac. Philad. lvii: n. sp.
- Hesperotettix curtispennis*, ♂, CAUDELL, p. 465, P. U. S. Mus. xxviii.
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- Paracinema superba*, East Africa, BOLÍVAR, p. 223, Mem. Soc. Espan. i, n. sp.
- Paroxya dissimilis*, Bahamas, MORSE, p. 20, Psyche xii, n. sp.
- Piezotettix karachi*, BOLÍVAR, p. 213, Mem. Soc. Espan. i, n. sp.
- Platypterna latipes*, Africa, BOLÍVAR, p. 222, t. c. n. sp.
- Plectrotettix caripes*, Paraguay, BRUNER, p. 214, Ent. News Philad. xvi, n. sp.

- Podisma almasyi*, Tien-Shan, KUTHY, p. 218, Ann. Mus. Hungar. iii, n. sp.
- Pristocorypha latruncularia* ♂, BOLÍVAR, p. 232, Mem. Soc. Espan. i.
- Pterotiltus apicalis*, p. 226, *ceruleocephalus*, p. 227, W. Africa, BOLÍVAR, t. c. n. spp.
- P. impennis* var. n. *multicolor*, BOLÍVAR, p. 228, t. c.
- Rhachicereagra* n. g. near *Polysarcus*, *nothra* n. sp., Costa Rica, REHN, p. 444, P. Ac. Philad. lvii.
- Rhionoderma humilis*, Costa Rica, REHN, p. 414, t. c. n. sp.
- Schistocerca malachitica*, Costa Rica, REHN, p. 439, t. c. n. sp.
- Schulthessia* n. g. *Atractomorphina*, *biplagiata* n. sp., Madagascar, BOLÍVAR, p. 217, Bol. Soc. espan. v.
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- Tropinotus regularis*, Paraguay, BRUNER, p. 215, Ent. News Philad. xvi, n. sp.
- Trysalis nasuta*, habits and sense organs, RÖHLER, Zool. Jahrb. Anat. xxii, pp. 254-273.
- Ukagonia* n. g. *Atractomorphina*, p. 214, *sphenarioides* n. sp., Madagascar, p. 215, BOLÍVAR, Bol. Soc. espan. v.
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INTRODUCTION.

When official decree stopped the assistance which for thirteen years it has been my pride and pleasure to offer to my colleagues, I was fortunate in persuading Miss Grant to take over the manuscript already prepared for the present issue and to complete the work with such supervision as I could give. She in turn has persuaded me to contribute this introduction and to insert within [], as usual, any remarks that might appear serviceable in the body of the Record. Consequently this, the last issue before the *Zoological Record* is amalgamated with the *International Catalogue*, preserves the style of its thirteen predecessors.

I. TITLES. The total 381 exceeds by 11 the number contained in the Record for 1900, when a special effort was made. Of these, however, 36 have not been seen. This is due, not to lack of effort, but mainly to the fact that I handed over to the Recorder a list of over 50 titles, many of which I had been trying to see for several years. A few of these have now been seen; others have been entirely excluded; 14, about which something definite is known, are placed in the ordinary list; while the remaining 22 form an appendix. Thus, it is hoped, these unseen works will not be entirely lost sight of, while at least those published after 1900 may receive attention in the *International Catalogue*.

The numbered titles belong to the following years: uncertain, 2; 1890, 1; 1893, 1; 1894, 3; 1895, 1; 1896, 1; 1897, 2; 1898, 5; 1899, 4; 1900, 3; 1901, 10; 1902, 10; 1903, 18; 1904, 25; 1905, 284; 1906, 1. The number 284 for the titular year has previously only been exceeded by the 288 of 1903, for which year we now know of 335 works. It is therefore probable that over 60 works remain to be recorded for 1905.

II. BIOLOGY. Although no work is conspicuous for either extent or fundamental character, several minor problems receive solutions while others are brought into prominence.

Anatomy.—In WOODLAND's account of spicule-formation in *Echinus* (344) the point of chief interest to us is that the spicule does not begin as a tetrahedron but as an intracellular granule which becomes triradiate. The axial organ and ovoid gland of echinoderms have long afforded matter for controversy. Not unnaturally, since PIETSCHMANN (256) discussing the varied histology and functions of the axial organ in Asteroids, and its connection with the oral blood-lacunae and with their radial extensions, proves that here as in crinoids different organs are confused. For *Isocrinus* these have been disentangled by REICHENSPERGER (267), who has been able to prove by excellent material of *I. decorus* that an adoral cell-complex, distinct from the glandular portion of the axial organ, but intimately connected with the labial blood-plexus, manufactures lymph-cells, which wander radially outward to the genital rachides of the arms and pinnules, becoming gonads on the way. His paper contains other interesting additions to our knowledge. Holothurians have no axial organ, but one seems to recognise something similar in RUSSO & POLARA's (283) statement that the formation of gonads in *Phyllophorus* and *Strongylocentrotus* is accompanied by a development of supporting and glandular cells, which latter nourish the gonads. POLARA (258) further shows that in *Phyllophorus* the bilateral symmetry of the genital caeca is not accompanied by corresponding symmetry of the genital lacuna and aboral sinus as is the case in *Synapta*.

By consideration of previous observations and by observation of unstalked Crinoids preserved in alcohol, MINCKERT (214) confirms the views already expressed that the hypozygal and epizygal are complete brachial elements (Bather 1892, Bosshard 1900), and that the syzygy assists autotomy and provides a base for regeneration (Walther 1886, Bather 1896, 1900); he divides regeneration of brachia into simply reproductive, i.e. reproducing the branch as it existed before amputation, and augmentative, i.e. increasing the number of branches by the introduction of axillaries; to the latter he ascribes the origin, both phylogenetic and ontogenetic, of all bifurcations beyond the first; thus, species with more than 10 final series (to which he restricts the term "arms") owe the increased number not to normal growth, but to amputation, presumably autotomous, and augmentative regeneration. It remains for future workers to prove or disprove this ingenious theory by cultivating some many-branched species from early stages onwards.

Minor anatomical notes are scattered through the larger faunistic and systematic memoirs to be mentioned later. Among the smaller papers BELL (25) notes the restriction of podial pores to the proximal arm-region, with probable absence of podia, in *Ophiomma*, *Ophiura*, and *Ophiopina*, and suggests search for a respiratory compound. KIERNIK (154, 155) shows that in the echinoids examined by him the glandular epithelium of the pedicellariae is columnar in a single layer, that the poison emerges by a single opening, that there are both striped and unstriped muscle fibres, quite distinct, the former probably effecting the rapid movements. The structure of various Palaeozoic Ophiurids leads BATHER (21) to suggest that the vertebrae of this class may be composed of two successive pairs of so-called ambulacra.

Physiology, Bionomics, Auxology.—Students of experimental mor-

phology, in which echinoderms are so often the corpora vilia, will find a useful summary and guide in PRZIBRAM (262). Papers on normal development are few. HENDERSON (134) describes the early stages of an asterid, in general like the corresponding stages of *Asterina gibbosa*, but with more yolk. In a paper by VALETTE (324) dealing with new Chalk echinoids, the most valuable part is a study of young *Micraster coranguinum*; these facts of ontogenesis should now be compared with the phylogenetic results of ROWE. Among the important papers on the experimental side are those by GARBOWSKI (106, 107), the remarks on pigment in the latter being of general interest. It is also interesting to learn that GODLEWSKI (115) has reared plutei of Echinoid x Crinoid origin. To the advances in the study of artificial parthenogenesis we cannot here refer, but may note abundant confirmation of the view previously expressed in these pages, that the most exact determination of the species or even variety under examination is a necessity for the purest of physiologists. Interesting physiological and bionomic notes will be found duly indexed, but attention may be directed to the discussion by LUKAS (201) of the stage of consciousness at which Echinoderms have arrived; though based mainly on the observations of others, it presents the matter in a novel and interesting light. The economically important subject of trepang fishery is considered in a pamphlet written for the government of the Dutch East Indies by Dr KONINGSBERGER (166) of Buitenzorg, Java.

III. DISTRIBUTION. DOEDERLEIN (79, 80) contributes to Roemer & Schaudinn's 'Fauna Arctica' a discussion of the distribution of 27 species of Echinoids and 6 of Crinoids, which makes it noteworthy that the only species obtained by those gentlemen in the Arctic were *Stronglocentrotus droebachiensis*, *Antedon eschrichti*, and *A. proliza*. KEMP (152) has drawn up a useful list of shallow and deep water echinoderms from W. Ireland, marred only by misuse of brackets. KOEHLER & VANEY (164) discuss the deep sea Holothurian fauna of the Indian Ocean as dredged by H.M.S. Investigator, and consider that in general the deep-sea fauna is more broken up and less cosmopolitan than was once supposed. The distribution of various Asterids and Ophiurids collected by the Swedish Magellan Expedition is discussed by LUDWIG (199) who gives many interesting anatomical details. Such are also contained in the description of Holothurians from the Horn and from New Zealand by R. PERRIER (249), who considers that bipolarity is no general principle but a peculiar distribution of a few species, demanding independent explanation in each case. The increased collections of FOURTAU enable him (98) to add much valuable information concerning the Eocene and Upper Cretaceous Echinoids of Egypt.

IV. SYSTEMATIC. Species unfortunately have been founded on larvae before now, but GARBOWSKI (107) is the first to base a systematic division on a minute difference in the ovum alone. On the other hand, the real aid that biometry can render taxonomy is admirably illustrated by EDWARDS (88) from two species of *Holothuria*.

GROBBEN (124), following Metschnikoff, places the *Echinoderma* and *Euteropneusta* in a phylum *Ambulacraria* characterized by a prostoma functioning as anus, a secondary ventral mouth-opening, and a hydrocoel.

Among Holothurians, new species of *Myriotrochinae*, a subfamily hitherto known only from Arctic or Sub-Arctic Europe, are described from Korea by OSTERGREN (236), whose description (325) of new species of Scandinavian and Arctic Synaptids contains important notes on taxonomy. Keferstein's little known *Rhabdomolgus*, rediscovered off Helgoland, is proved by LUDWIG (196) to be a low form of *Synaptidae*. A new *Psolus* from California is described by FISHER (93). KOEHLER & VANEY (164) introduce 59 new species and the following new genera of deep-sea Holothurians: *Dendrothuria*, *Pseudothuria*, *Allopatides*, *Perisona*,

Bathyzona, *Amphideima*, *Benthophyces*, *Euri* [? *Eurino*-, or *Eury*-] *plastes*, *Filithuria*, *Gephyrothuria*; perhaps they never recognised the scholarly aptness of the names due to Théel.

New Echinoids from Arctic and Antarctic regions are briefly described by MORTENSEN (220). DOEDERLEIN (78) bases the following new genera on Echinoids obtained by the 'Valdivia': *Pygmaeocidaris*, *Lamproechinus*, *Orechinus*, *Notechinus*, *Mortensenia*; these are distinguished by minute, though not necessarily trivial, characters; the many new species are not figured. Tertiary Echinoids from Italy and Sardinia, Lower Cretaceous Echinoids from Capri, and interesting new species of *Diademopsis* and *Mesodiadema* from the Middle Lias of Italy, are described by AIRAGHI. With the cooperation of LAMBERT, SAVIN (286) has revised the fossil Echinoids of Isère, describing some new species; and in an appendix LAMBERT finds the new genus *Eosalenia*, which apparently is not a Salenid. The paper appears in three forms with two titles and three independent paginations; the fate of my (21) enables me to sympathise with Col. SAVIN in this misfortune. DONCIEUX (81) in collaboration with MIQUEL (215) & LAMBERT (171) has published a useful catalogue of the Nummulitic (Lower Lutetian) fossils of l'Aude and l'Hérault; the Echinoids are specially described by LAMBERT, in whose chapter so many novelties are concealed that one is sincerely grateful for the light shed on them by his own review, but would it not be simpler to use the expressions n. fam., n. g., etc. in the paper itself? His new genera appear to be *Stenaster* (afterwards *Parmulechinus*) and *Pseudobrius*, neither from the rocks under discussion. The W. African Eocene fauna is increased by an interesting *Echinolampas* described by LAMBERT in CHAUTARD (47). Discussing the Eocene Spatangids of Egypt, FOURTAU (97) proposes the new genera *Heterospatangus* and *Plagiopneustes* and the new subgenus of *Euspatangus*—*Perispatangus*; he places the last two in a new group—*Megapneustidae*, but *Heterospatangus* and *Euspatangus* in the *Euspatangidae*; the genotype of *Hypospatangus* having been proved a *Trachyspatangus*, FOURTAU thinks to resuscitate the genus by selecting a new genotype, and gives its name to yet another of this sort of family. All these divisions show the danger of relying on the fascioles, and no wonder Mr FOURTAU is sometimes "assez embarrassé." *Fibulina* is a new genus described with other new Eocene Echinoids from Madagascar by TORNUST (316). P. DE LORIO (195) describes a new Cretaceous *Astropecten* from Patagonia and many new Echinoids from the Tertiary of Spain and Africa, the Lower Cretaceous and Upper Jurassic of Portugal and Mt. Salève. He reestablishes *Echinites excavatus* Leske.

Continuing his report on the *Echinoderma* found off the coast of S. Africa, BELL (25, 26, 27) describes Asteroids, Ophiuroids, and Crinoids, and notes resemblance to both N. Atlantic and Indian Ocean faunas. Inter alia, he describes a new *Palmipes* with 9 rays instead of the usual 5.

The most important work of the year is LUDWIG's (197) account of the Asteroidea dredged by the Albatross in 1891 and 1899-1900, which establishes the genera *Parastropecten*, *Albatrossia* (nom. preocc.), *Pavliella*, *Sarkaster*, and *Alexandruster*. Although general morphological and taxonomic conclusions are reserved for the author's memoir on the starfish of the German Deep-Sea Expedition, still the present beautiful volume is full of new observations on the skeletal and internal anatomy. FISHER (92) describes, without figuring, 24 new species of starfish from Californian and Alaskan deep waters, including *Cryptopeltaster* n. g. and *Eremicaster* and *Myzodermu* n. s.-gg. The monograph of British Cretaceous Asteroidea is being continued by SPENCER (305) who describes some new species; the previous descriptions by SLADEN are completed by SKARLE's excellent drawings. The littoral Ophiurids collected by the Siboga are described by KOEHLER (160) who establishes 60 new species and the

genera *Ophiogypsis* and *Astrochalcis*. BATHER (21) describes a new Devonian Ophiurid *Sympterura*.

There is much to be said for MINCKERT's (213) establishment of a new genus *Decametrocrinus* for the species of *Promachocrinus* with simple arms, and something to be said for his new family *Decametrocrinidae*; but one is curious to know what he will find to say in favour of his Orders *Eleutheroocrinoidea* and *Stylocrinoidea*, which resuscitate an idea that one had thought dead and buried. But even *Palaeocrinoidea* and *Neocrinoidea* are still in the text-books. If the long obscure genus *Cleioocrinus* still remains a puzzle, this is not the fault of SPRINGER's masterly description (306); it is noteworthy that his appeal to Cisatlantic phylogenists was independently answered in almost the same sense by two of them. Mignon TALBOT (312) publishes interesting and well-illustrated notes on several Lower Devonian crinoids of New York, but still fails to straighten out *Melocrinus* and *Mariocrinus*. Equal confusion attaches to *Cyathocrinus ornatissimus*, a figure of which adorns the cover of the Geological Report of the Fourth District, N.Y. (1843). The original material contained two distinct species of dicyclic inadunate crinoids with pinnulate arms, which in species A are heterotomous, but in species B bifurcate only once. J. M. CLARKE in a memoir (4) published two years ago, but not yet seen in this country, appears to have regarded a specimen of B as the holotype of *C. ornatissimus*. WHITFIELD (339) however has little difficulty in proving that the holotype was a specimen of A, which he agrees with JAEKEL to place in *Cosmocrinus*. For B, WHITFIELD establishes the new genus *Maragnicrinus*, which seems intermediate between the Silurian *Gothocrinus* and the Carboniferous *Scytalocrinus*, to which latter CLARKE (4 & 57) referred the genotype. Continuing his researches on the fossil Echinoderms of Stramberg, REMES (269) describes a curious new genus, *Pseudosaccocoma*. BENECKE's fine monograph on the fossils of the Iron-ore formation of Lothringen and Luxemburg (29) describes an *Isocrinus* known as *Pentacrinus personatus*.

A Professional Paper on Lead, Zinc, and Fluorspar deposits is the hiding-place chosen by ULRICH (321) for valuable notes and excellent figures of Carboniferous Echinoderms including some new Blastoids. A new writer G. H. HUDSON (144) has published some admirable descriptions of interesting Ordovician crinoids and a cystid. Among problematica one mentions *pour mémoire* the *Astrechinus* of JAEKEL (145) though he has not yet published the description.

The following table gives the numbers of the new names proposed in the works indexed.

	New genera	Altered generic names	New sub-genera	New species	New varieties
Holothuriodea	10	0	0	68	8
Echinoidea	12	1	1	81	4
Asteroida	6	0	2	86	2
Ophiuroidea	3	0	0	64	1
Crinoidea	3	0	0	15	0
Cystidea	0	0	0	1	0
Blastoidea	0	0	0	5	1
Incertae sedis	1 n.n.	0	0	0	0
Total	34 + 1 n.n.	1	3	320	16

Further remarks by me are placed in [].

F. A. BATHER.

December, 1906.

CORRIGENDA in previous Records.

Record for 1900, vol. XXXVII:—

- p. 103. *Phymosoma abbatei*. For 'Santonian not Turonian' read 'Santonian as well as Turonian.'

Record for 1902, vol. XXXIX:—

- p. 29. No. 247. For "pp. 1-23" read "pp. 265-287."

Record for 1904, vol. XLI:—

- p. 48. *Cucumaria frondosa*, entry under CLARK should read "that recorded from Florida reef probably not this sp., that from Alaska and N. Pacific probably *C. japonica*."
- p. 93. *Agelacrinus chapmani*; AMI (7). Dr Ami desires to explain that, on p. 61 G of his paper, "*Agelacrinites Chapmani*, Billings" is a clerical error for "*Agelacrinites Billingsi*, Chapman."

It is hoped that corrections will, as heretofore, be furnished by authors, so that they may be inserted in future volumes.

I. TITLES*.

- ABICH, H. (1) Zool. Rec. 1902. Abstract by N. J. KARAKASCH, Annuaire geol. min. Russie, vii, p. 42.
1. AEBERHARDT, B. Note sur la faune de l'Oxfordien inférieur du Jura bernois. Ecol. geol. Helvet. viii, pp. 439-444. (Jan.)
[III, B, iii, c, 2.]
2. AGASSIZ, A. On the progress of the Albatross Expedition to the Eastern Pacific. Amer. J. Sci. (4), xix, pp. 143-148. (Feb.)
[III, A, iv.]
3. —. Albatross Expedition to the Eastern Pacific. Science (n. s.), xxi, pp. 178-183. (3 Feb.)
[III, A, iv.]
Same as the first letter in AGASSIZ (4).
4. —. Three letters from Alexander Agassiz to the Hon. George M. Bowers, United States Fish Commissioner, on the Cruise, in the Eastern Pacific, of the U.S. Fish Commission steamer "Albatross," Lieut.-Commander L. M. Garrett, U.S.N., commanding. Bull. Mus. Harvard, xlv, pp. 65-84. (April.)
[III, A, iv.]
- AIRAGHI, C. (2 & 3) Zool. Rec. 1903. Abstracts: Boll. Com. geol. Ital. xxxv, p. 268 (1904).
5. —. Echinodermi miocenici dei dintorni di S. Maria Tiberina (Umbria). Atti Acc. Torino, xl, pp. 43-54, i pl. (Jan.)
[III, B, ii, d. iv, c.]
Review: by J. LAMBERT, Rev. paleozool. ix, p. 97 (April, 1906).
Abstract by P. E. V[INASSA DE REGNY], Riv. ital. Pal. xi, p. 37 (June, 1905).

* An asterisk prefixed to a title indicates that the Recorder has not seen the Paper or Work referred to.

The Symbols in [] refer to the divisions of the Subject-Index, u, iii, iv. Those referring to the Systematic portion [iv, A-K] are inserted only when some question of definite importance to the systematist is dealt with in the work. The names of the genera mentioned in any work can generally be gathered from the lists given under Distribution [III, A or B], and the species can then be traced by turning to Section iv. Only where this was not possible have names been inserted after the title.

6. [AIRAGHI, C.] Appunti di Echinologia fossile. Atti Mus. Milano, xlv, pp. 1-10, pl. i. [III, B, ii, d, f; iii, d. iv, c.]
Abstracts: by J. LAMBERT, Rev. paleozool. ix, p. 161 (July, 1905); by VINASSA DE REGNY, Riv. ital. Pal. xi, p. 93 (Aug. 1905).
7. —. Echinodermi infracretacei dell' isola di Capri. Riv. ital. Pal. xi, pp. 82-90, pl. i. (15 May [i.e. end of June].) [III, B, iii, b, 2. iv, c.]
8. —. Echinidi miocenici della Sardegna raccolti dal Dott. Capeder. Atti Mus. Milano, xlv, pp. 209-217, 2 text-figg. [III, B, ii, d.]
9. ALBERT [HONORÉ CHARLES] (Prince de Monaco). Sur la campagne de la Princesse Alice. C.R. Ac. Sci. cxl, pp. 1373-1376. (22 May.) Reprinted as Bull. Mus. Monaco, No. 39, 5 pp. (5 June.) [III, A, ii.]
10. AMEGHINO, F. L'age des formations sédimentaires de Patagonie. An. Soc. Argent. li, pp. 65-91; liv, pp. 161-180. (April, 1901; Oct. 1902.) [III, B, ii, a.]
Parts of a series of papers under this title beginning in vol. l, p. 109 (Sept. 1900).
11. AMI, H. M. Preliminary lists of fossil organic remains from the Potsdam, Beekmantown (Calceiferous), Chazy, Black River, Trenton, Utica, and Pleistocene formations comprised within the Perth Sheet (No. 119) in Eastern Ontario. Being Appendix to a Report on the Geology by R. W. ELLS. Ann. Rep. geol. Surv. Canada, xiv, pp. 801-891. (Published separately 1904, volume 1905.) [III, B, iv, h.]
12. AMMON, L. v. Zur Geologie von Togo und vom Nigerlande. Mt. geogr. Ges. München, i, pp. 393-474, pl. xix, text-figg. [IV, B, ii, f.]
- ANTHULA, D. J. (18) Zool. Rec. 1899. Abstract by N. J. KARAKASCH, Annuaire geol. min. Russie, vii, p. 42 (1905).
- ARIOLA, V. (13) Zool. Rec. 1904. Abstract by P. MAYER, Zool. Jahresber. 1904, p. 15 (Aug. 1905).
- 12A. —. Le ipotesi nella partenogenesi sperimentale e la fecondazione normale. Atti Soc. Ligustica, xiv, pp. 149-159. (1903.) [II, F, viii.]
- 12B. —. La merogonia e l' ufficio del nucleo nella fecondazione. Atti Soc. Ligustica, xv, pp. 196-203. (Dec. 1904, recd. Aug. 1905.) [II, F, viii.]
- 12C. BAGLIONI, S. Ueber das Sauerstoff bedürfnis des Zentralnervensystems bei Seetieren. Zeitschr. allg. Physiol. v, pp. 415-434. [II, C, vi.]
13. BAKALOW, P. Vorläufige Mitteilung ueber die Fauna der Trias und des Jura von Kotel (Bulgarien). Centrbl. Mineral. 1905, pp. 481-483. (Sept.) [III, B, iii, d, e.]
14. BALL, J. Kharga Oasis: its topography and geology. Rep. geol. Surv. Egypt, 1899, Part II, 116 pp., xix pls. (April, 1901.) [III, B, ii, f; iii, b, I.]
15. —. On the topographical and geological results of a reconnaissance survey of Jebel Garra and the oasis of Kurkur. Surv. Dept. Egypt, 8vo, 40 pp., vii pls. Cairo. (1902.) [III, B, ii, f; iii, b, I.]
16. BASSANI, F. La ittiofauna delle argille marnose plioceniche di Taranto e di Nardò (Terra d' Otranto). Atti Acc. Napoli (2), xii, No. 3, 59 pp., iii pls. [III, B, ii, b.]
Abstract by Author, Riv. ital. Pal. xii, p. 1 (Feb. 1906).
- BASSLER, R. S. See UNITED STATES NATIONAL MUSEUM (322).

17. BATAILLON, E. La parthénogénèse expérimentale d'après les derniers travaux de J. Loeb. Arch. zool. exp. Notes (4), iii, pp. ccxxiii-ccxxv. (Sept.) [II, F, viii.]
Review of LOEB, J. (185, 186, 187).
18. BATE, DOROTHY M. A. On the oosiferous cave-deposits of Cyprus. Geol. Mag. (n. s.), dec. v, vol. i, pp. 324-325. (July, 1904.) [III, B, ii, d.]
19. BATHER, F. A. The Echinoid name *Discoidea subucula*. Ann. Nat. Hist. (7), xv, pp. 145-148. (Jan.) [II, E, iii. iv, c.]
Review: by J. LAMBERT, Rev. paleozool. ix, pp. 95-96 (April, 1905). Abstract: by Author, Geol. Centrbl. vi, p. 311 (15 Mar. 1905).
20. —. [Remarks on *Clypeaster ultus* var. *portentosus* from Cyprus, in discussion on paper by C. V. BELLAMY.] P. Geol. Soc. London, 1904-05, pp. 30-31. (Jan.) [III, B, ii, d.]
21. —. *Sympterura minveri*, n. g. et sp.: a Devonian Ophiurid from Cornwall. Geol. Mag. (n. s.), dec. v, vol. ii, pp. 161-169, pl. vi. (April.) [II, B, i, e, 5. III, B, iv, f. iv, E.]
Republished with *unauthorised* title "A new Ophiurid from Cornwall (*Sympterura Minveri*, n. g. et sp.)," in Tr. geol. Soc. Cornwall, xiii, pp. 71-85, pl. ii: June.
Abstracts: in J. R. Micr. Soc. 1905, p. 319 (June); by Author, Geol. Centrbl. vi, p. 669 (1 July, 1905); by KAYSER, N. Jahrb. Min. 1906, i, p. -301- (21 April, 1906); in LUDWIG (200).
— See also BELLAMY (28), NEWTON (227), SPRINGER (306), STOBBS (308), U. S. NAT. MUS. (322).
22. BEADNELL, H. J. L. The Cretaceous region of Abu Roash near the Pyramids of Giza. Rep. geol. Surv. Egypt, 1900, Pt. II, 48 pp., xiii pls., folding map. (1902.) [III, B, iii, b, I.]
23. —. The relations of the Eocene and Cretaceous systems in the Esna-Aswan reach of the Nile Valley. Quart. J. Geol. Soc. lxi, pp. 667-678, text-figg. (30 Nov.) [III, B, iii, b, I.]
24. —. The topography and geology of the Fayum Province of Egypt. Surv. Dept. Egypt, 4to, 102 pp., xxiv pls. Cairo. [III, B, ii, f.]
25. BELL, F. J. The Echinoderma found off the coast of South Africa. Part III. Ophiuroidea. "Marine investigations in S. Africa," vol. iii, pp. 255-260, pl. i. Cape Town. (8 May.) [II, B, i, e, 6. III, A, iii. iv, E.]
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26. —. The Echinoderma found off the coast of South Africa. Part II. Asteroidea. "Marine investigations in S. Africa," vol. iii, pp. 241-253. Cape Town. (9 May.) [II, E, i, a. III, A, iii. iv, D.]
Abstract: J. R. Micr. Soc. 1905, p. 443 (Aug.).
27. —. The Echinoderma found off the coast of South Africa. Part IV. Crinoidea. "Marine investigations in S. Africa," vol. iv, pp. 139-142, pls. ii-iv. (28 Aug.) [III, A, iii. iv, F.]
28. BELLAMY, C. V. & JUKES-BROWNE, A. J. The geology of Cyprus. 8vo, 72 pp. Printed at Plymouth: "Published by Authority" [I whose.] (July.) [III, B, ii, d.]
Ech. determined by F. A. BATHER.
— See also BATHER (20).

29. BENECKE, E. W. Die Versteinerungen der Eisenerzformation von Deutsch-Lothringen und Luxemburg. Abh. geol. Karte Elsass (n. s.), vi, 598 pp., lix pls., 4 text-figg. (May.) [III, B, iii, c, J. IV, F.]
- BERG, L. (24) Zool. Rec. 1904. Abstract by N. J. KARAKANOH, Annuaire geol. min. Russie, vii, p. 49 (1905).
30. BERGMANN, W. Echinoderma für 1893. Arch. Naturg. 1899, Bd. ii, pp. 461-494. (Nov.) [II, F, iii.]
31. *BIGNEY, A. J. Experiments on developing eggs. P. Indiana Ac. 1901, pp. 95-96. (1902.) [II, F, viii.]
- BLANCKENHORN, M. See FOURTEAU, R.
32. BLASCHKE, F. Die Gastropodenfauna der Pachycardientuffe der Seiseralpe in Südtirol nebst einem Nachtrag zur Gastropodenfauna der roten Raibler Schichten vom Schlernplateau. Beitr. Pal. Oesterr.-Ung. xvii, pp. 161-221, pls. xix-xx. [III, B, iii, c.]
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- BOEHM, J. See VALETTE, A.
34. BOHN, G. Les mystères de la formation de l'oeuf. Rev. Idées, ii, pp. 307-310. (15 April.) [II, F, viii.]
— See also VIGUIER (328).
35. BOISTEL, A. Les fossiles néogènes du Maroc rapportés par M. Paul Lemoine. Bull. Soc. geol. France (4), v, pp. 201-208. (July.) [III, B, ii, c.]
Rotuloidea discussed by J. LAMBERT.
Abstract: by J. LAMBERT, Rev. paleozool. x, p. 64 (Jan. 1906).
36. BOLAU, H. Seestern und Einsiedlerkrebs. Zool. Garten, xlv, p. 53. (Feb.) [II, D, iv, d.]
- 36A. BORCHGREVINK, C. Das Festland am Suedpol. Die Expedition zum Südpolarland in den Jahren 1898-1900. 8vo, vi+610 pp., v pls., 321 text-figg., 6 maps. Breslau: Schottlaender. M. 13.50. [III, A, i; vi.]
37. BOUVIER, E. L. & SEURAT, G. *Eumodon convictor*, crabe commensal d'un Oursin. C.R. Ac. Sci. cxl, pp. 629-631. (Mar.) [II, D, viii, c.]
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38. BOVERI, T. Zellen-Studien. v. Ueber die Abhängigkeit der Kerngröße und Zellenzahl der Seeigel-Larven von der Chromosomenzahl der Ausgangszellen. Jena Zeitschr. xxxix, pp. 445-524, pls. xix, xx, 7 text-figg. (18 Apr.) [II, F, viii.]
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39. —. Ueber Doppelbefruchtung. SB. Ges. Würzburg, 1905, pp. 8-9. (June.) [II, F, viii.]
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68. DAVIS, J. R. A. The natural history of animals. 8 half-vols., 8vo, numerous text-figg. 7s. each. London: Gresham Press. (1903.)
[II, B, i, a, 1: B, i, a, 9;
iii, c: C, iii: D, ii; iv, a; v; vi; vii, d; ix: E, ii: F, ii, a.]
69. DEECKE, W. Einige neue Aufschlüsse im Flötzegebirge Vorpommerns und allgemeine Charakterisierung der pommerschen Kreideformation. *Zeitschr. Deutsch. geol. Ges.* lvii, Briefl. Mitt. pp. 11-26.
[III, B, iii, b, 1.]
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72. —. Influence de quelques facteurs sur la parthénogénèse expérimentale. *C.R. Ac. Sci.* cxli, pp. 1201-1204. (26 Dec.) [II, F, viii.]
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[III, B, iii, c, 3.]
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[III, B, iii, b, 1.]
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[II, E, iii. III, A, v.]
80. —. Arktische Crinoiden. *Fauna Arctica*, iv, pp. 395-406. (7 Sept.)
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81. DONCIEUX, L. Catalogue descriptif des fossiles nummulitiques de l'Aude et de l'Hérault. Première Partie: Montagne Noire et Minervois. *Ann. Univ. Lyon* (n. s.), i, fascicule 17, 184 pp., v pls.
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** *There is reason to believe that the following books and papers contain references to, or descriptions of, echinoderms; but, in spite of every effort short of actual purchase by the Recorder, it has not been possible to see them. Therefore they are not referred to in the Subject Index.*

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II. BIOLOGY.

(A.) EVOLUTION.

- i. **General Principles**:—Heredity, experimental; PRZIBRAM (262).—A source of weakness forms starting-point for a new line of evolution, e.g. invagination of base in *Lyriocr.* and *Blastoidocr.*; HUDSON (144) p. 272.

- ii. **Relations of Echinoderma:**—Place and definition of *Echinoderma* in an embryologic classification of *Metazoa*; HALLEZ (127).—*Echinoderma* allied with *Enteropneusta* to form a phylum *Ambulacralia*; GROBBEN (124).—Brief account of previous theories, exposition, and criticism of the Pentasomaea of Herouard (121, Zool. Rec. 1904); KEMNA (151).
- iii. **Phylogenies of smaller groups:**—Zonal Evolution of Chalk *Micraster*; TREACHER (319) p. 158.

(B.) MORPHOLOGY.

i. **Anatomy:**—a. *ECHINODERMA*.

1. General accounts:—GROBBEN (124).—HERTWIG (136 & 136A) pp. 300-320.—PORTER (259).—Popular; SCHERREN (289): littoral Echinoderms; FURNEAUX (102A) pp. 157-171, pl. iv: structure and classification; DAVIS (68) ii, p. 450, text-figg. and coloured plate.
2. Symmetries:—Vacant.
3. Homologies of Classes:—Vacant.
4. Skeletal tissue or Stereom:—The commencing spicule not a tetrahedron; WOODLAND (344) p. 312.
- 5-8. Vacant.
9. Nerve-System and Sense-organs:—LUKAS (201).—"Direction-eyes" in *Ech.* and *Asl.*, popular; DAVIS (68) vii, p. 41.
- 10-12. Vacant.

b. *HOLOTHURIOIDEA*.

1. General Anatomy:—General account, semi-popular; SHELDON (299) pp. 190-195: ditto, in Dutch; KONINGSBERGER (166) pp. 1-12, pls. i-iii.—Anat. *Caudina arenata*, orig. fig.; KINGSLEY in HERTWIG (136).—Anat. *Synapta bergensis*; ÖSTERGREN (235).—Anat. notes on various spp., see genera under III, A, iv & vi; PERRIER (249: ditto, see III, A, iii; KOEHLER & VANEY (164).
- 2-5. Vacant.
6. Hydrocoel and associated cavities:—Sucking feet and other podia of *Synallactes*; PERRIER (249) p. 7.
7. Coelom and other body-cavities:—Genital lacuna and aboral sinus in *Phyllophorus*; POLARA (258).
8. Digestive System:—Vacant.
9. Nervous System and Sense-organs:—Nerve-fibrils in periesophageal ring *Synapta*; BOCHENEK (33).
10. Mesodermal tissues (exc. skeletal):—Vacant.
11. Axial organ:—Vacant.
12. Genital System:—Genital caeca and connection with gonoduct in *Phyllophorus*; POLARA (258).

c. *ECHINOIDEA*.

1. General Account:—Semi-popular; SHELDON (299) pp. 171-190: elementary "sea-urchin"; COLTON (62) I, p. 338.
2. Symmetries:—Vacant.
3. Homologies with other Classes:—Vacant.
4. Stereom:—Formation of spicular skeleton in *Echinus pluteus*; WOODLAND (344).—Section of *Echinus* radiole $\times 60$ diam.; KERR (153) p. 65, pl. xv.

5. Skeletal Anatomy:—Apical system *Schizaster*, TORNQUIST (316) p. 330 and fig.—Jaws, fossil epiphyses; HUCKE (143) p. 166, pl. xxiii.
6. Hydrocoel &c.:—Vacant.
7. Coelom &c.:—Vacant.
8. Digestive System:—Branched caecum of intestine, *Echinarachnius*; GREGORY (120).
9. Nervous System:—Nerves of pedicellariae; KIERNIK (154 & 155).
10. Mesodermal tissues (exc. skeletal):—Histology of pedicellariae of *Paracentrotus* and *Parechinus*, esp. muscles, smooth and striped; KIERNIK (154 & 155).
- 11, 12. Vacant.

d. *ASTEROIDEA*.

1. General Account:—Semi-popular; SHELDON (299) pp. 161–169.—Elementary “common starfish”; COLTON (62) I, p. 331.—Anat. notes on anus, podia, superambulacra, Polian and Tiedemann's bodies, caeca of gut, septa of body-cavity, arm-muscles, generative organs, and gonads of *Ast.* mostly deep-sea, dredged by Albatross, see genera under III, A, iv; LUDWIG (197).—Anat. notes as above on *Ast.* from S. Patagonia, see genera under III, A, vi; LUDWIG (199).
2. Symmetries:—Plane of symmetry of a $\frac{1}{2}$ -larva is at right angles to plane of first cleavage; DRIESCH (87).
- 3, 4. Vacant.
5. Skeletal Anatomy:—Pedicellariae; LUDWIG (197) p. 9 et passim.—Actinolateral spines of *Retaster* are modified adambulacral spines; LUDWIG (199) p. 66.
7. Coelom and other body-cavities:—Ventral blood-lacunae in *Astropecten*, *Palmipes*, and *Asterias*, anat. and histol.; PIETSCHMANN (256).
- 8–10. Vacant.
11. Axial organ in *Astropecten*, *Palmipes*, and *Asterias*, anat. and histol.; PIETSCHMANN (256).
12. Genital organs:—Vacant.

e. *OPHIUROIDEA*.

1. General Account:—Semi-popular; SHELDON (299) pp. 169–171.
- 2–4. Vacant.
5. Skeletal Anatomy:—Vertebrae composed of two successive ambulacral pairs (p. 165), mouth skeleton in primitive *Oph.* p. 167; BATHER (21).
6. Hydrocoel and associated cavities:—Podial pores restricted in *Ophiozona*, *Ophiolipus*, and *Ophiura*, podia absent?; BELL (25) p. 256.
- 7–12. Vacant.

f. *CRINOIDEA*.

1. General Accounts:—Semi-popular; SHELDON (299) pp. 151–160.—General form and size; HAMANN (129) p. 1445.—General anat. *Pentacr.* [= *Isocr.*] *decorus*, with good diagram section; REICHENSPERGER (267).
- 2, 3. Vacant.
4. Stereom:—Integument and stereom; HAMANN (129) p. 1447.
5. Skeleton:—General account; HAMANN (129) p. 1449.—“Arm” restricted to finial series (p. 166), “Syzygy” restricted as proposed by Bather (21 Zool. Rec. 1897) (p. 167), “Synar-

- thrie" for articulation between brachials (p. 168), "Syzygial pair" consists of two independent brachials "hyposygal" and "epizygal," the method of reckoning adopted by Bather (op. cit. et passim) fully adopted and proved (pp. 168-177, 180), more than one branching due to regeneration (see II, D, vii, f); MINCKERT (214).—IBB supposed in *Apiocr.*; TORT (315).—Complete description of *Cleioocr.*, comparison with *Reteocr.* and *Glyptocr.*; SPRINGER (306).
6. Hydrocoel &c.:—Water-vascular system and pores; HAMANN (129) p. 1480.
 7. Coelom &c.:—General account; HAMANN (129) p. 1487.
 8. Digestive System:—Relations of subjective grooves, mouth, gut and anus in *Antedon*, orig. fig.; KINGSLEY in HERTWIG (136) p. 341.
 9. Nervous Systems:—Axial canals (p. 1466) and nervous system (p. 1468), sense-organs (p. 1478); HAMANN (129).—Dorsal nerve-system *Pentacr.* [= *Isocr.*] commissure in BB, brachial chiasmas, chambered organ blind above, its extensions in stem and cirri, function partly nutritive; REICHENSBERGER (267).
 10. Mesodermal tissues (exc. skeletal):—Muscles of arms and cirri; HAMANN (129) p. 1463.
 11. Axial organ:—General account; HAMANN (129) p. 1492.—Of *Pentacr.* [= *Isocr.*]; REICHENSBERGER (267).
 12. Generative Organs and Gonads:—Axial complex connected with genital rachides, lymph-cells wander outwards and change into gonads; REICHENSBERGER (267).
- g. *CYSTIDEA*.
1. General Account:—Semi-popular; SHELDON (299) pp. 145-149.
 - 2-12. Vacant.
- h. *BLASTOIDEA*.
1. General Account:—Semi-popular; SHELDON (299) pp. 149-151.
 - 2-12. Vacant.
- ii. Variation:—
- a. In form:—Vacant.
 - b. In form and surface characters:—in *Peltaster nidarosiensis*; GRIEG (121): in *Pentagonaster granularis*; GRIEG (122): in mouth-shields of *Ophiura signata*; KEMP (152) p. 193, pl. xxxv.
 - c. In colour:—in *Ophiopholis* not due to different pigments; GRIF-FITHS (123).—Colour in life of various spp. of *Muelleria*, *Stichopus*, *Holothuria*; KONINGSBERGER (166): in life and spirit of deep see *Hol.*, for genera see III, A, iii; KOEHLER & VANEY (164): in formol of Somali *Hol.*, see III, A, iii; VANEY (326): in life of *Synapta digitata*, *Cucumaria elongata* et juv., *Synapta digitata profundicola* (and in spirit), *Laetmogone violacea*, *Asthenosoma hystrix*; KEMP (152): in life of many *Ast.*, see III, A, iv; FISHER (92).—Colour of littoral *Oph.*, see list of genera III, A, iii; KOEHLER (160).
 - d. Meristic variation:—
 1. Variation from pentamerous symmetry:—4 rayed *Astropecten exiguus*; LUDWIG (197) p. 72.—4 rayed *Nymphaster sub-spinosus*; KEMP (152) p. 189.—4 and 6 rayed *Pentagonaster granularis*; GRIEG (122) p. 5.—5 and 6 rayed *Ophiactis savignyi*; KOEHLER (160) p. 26.
 2. Reduplication or absence of parts:—Apparent discontinuous variation often due to augmentative regeneration; MINCKERT

(214) & PRZIBRAM (262) p. 89.—Duplication of interradials in *Cryptoblastus*; ROWLEY (282) p. 301.—Suppression of cirrus and corresponding swelling of process from chambered organ in *Pentacr.* [*Isocr.*]; REICHENSPERGER (267) p. 180.

- e. Abnormalities:—in tuberculation and in arrangement of podial pore-pairs, *Cyphosoma abbatei*; FOURTAU (99) p. 123.—Teratogenesis; PRZIBRAM (262).

iii. Secondary Sexual Characters:—

- a. Differences of Form or Structure:—Vacant.
- b. Differences of Colour:—Vacant.
- c. Protection of Young:—DAVIS (68) vi, p. 356.—Origin of, compared with symbiosis, instances in *Echinoderma*; GIARD (110) pp. 254, 256.—Marsupial petals in *Amphipneustes koehleri*; MORTENSEN (220) p. 243.—“Eine Art von Brutpflege” in *Asterina ambriata*; LUDWIG (199) p. 63.

(C.) PHYSIOLOGY.

- i. **General**:—Vacant.
- ii. **Circulation**:—in ventral lacunae and podia of *Ast.*; PIETSCHMANN (256).
- iii. **Respiration**:—DAVIS (68) iv, p. 411.—Osmotic pressure of perivisceral fluid in *Thyone*, *Arbacia*, and *Asterias*; GARREY (108).
- iv. **Alimentation and Digestion**:—Vacant.
- v. **Excretion and its Products**:—Lymphocyte formation in axial organ of *Ast.*; PIETSCHMANN (256).—Pigment of ova and larvae of *Ech.*, its origin and biological value; GARBOWSKI (107) p. 615.—Pigment of *Oph.*, esp., *Ophiopholis belli*, chemical and physical analysis; GRIFFITHS (123).
- vi. **Sensation**:—Sensation and sensibility. Have Echinoderms consciousness? not necessary. List of observations bearing on consciousness that remain to be made (p. 260); LUKAS (201).—Taxis and tropism; PRZIBRAM (262).—Tentacle-reflex in *Cucumaria*; GRAVE (118).—Need of central nervous system for oxygen as proved by experiments on *Echinus* and *Ophioderma*; BAGLIONI (12c).
- vii. **Miscellanea and Experimental Physiology**:—Introduction to experimental morphology; PRZIBRAM (262).—Protoplasm of ova broken up by centrifuge, *Asterias*, *Strongylocentrotus*, *Sphaerechinus*; GURWITSCH (126).—Blood of *Ech.* no haemolytic action on blood corpuscles of bird and mammal; FRIEDENTHAL (99a) p. 499.—Lecithin in sexually active gonads of *Toxopneustes*; LOISEL (194).

(D.) BIONOMICS.

- i. **General Accounts**:—(a) popular; GALLUP (104); SCHERREN (289).—Deep-sea Echinoderms, popular, JOUBIN (149) pp. 25, 119, figg. 21–24, 104–139. (b) KONINGSBERGER (166) pp. 22–25.
- ii. **Special habits**:—Burrowing of *Hol.*; DAVIS (68) v, p. 230: of *Ophiocnida brachiata* by podia; KEMP (152) p. 181.—Phosphorescent *Diadema*, *Amphiura*, *Ophiacantha*, *Brisanga*; PUETTER (263) p. 23.
- iii. **Habitat**:—(a) of all species in Trondhjem Fjord; STORM (309).—Various *Hol.*, *Ech.*, *Ast.*, *Oph.*, see III, A, ii, *Faeroes* and *Iceland*;

- HØRRING (142).—Various spp. at Balearic Ia.; BUEN (44). (b) Of various spp., see lists III, A, ii; KEMP (152).—*Bathyploca*, *Mesothuria*, *Cucumaria*, *Myriotrochus*, on clay in deep water; NORDGAARD (230) p. 241.—*Cucumaria* at Beaufort, N. C.; GRAVE 118. (c) of various spp., see lists III, A, ii; KEMP (152). (d) Bottom affected by spp. of *Ast.* in Pacific, for genera see III, A, iv; LUDWIG (197): ditto, S. Patagonia, see III, A, vi; LUDWIG (199).—*Ctenodiscus crispatus*, mud-eater; NORDGAARD (230) p. 244. (e) of various spp., see lists III, A, ii; KEMP (152).—*Ophiacantha spectabilis* on *Lophohelia*, always; NORDGAARD (230) p. 239. (f) of *Antedon bifida*, bottoms of moored hulks; KEMP (152) p. 179.
- iv. **Feeding**:—(a) LUKAS (201): Food; DAVIS (68) III, p. 153, IV, p. 264. (d) *Asterias rubens* eats hermit-crabs; BOLAU (36).
- v. **Defence and Protection**:—Protection (IV, pp. 285, 287), Protective armour (IV, p. 340), Active defence (IV, p. 361); DAVIS (68).
- vi. **Locomotion**:—(a) movement in general and locomotion; LUKAS (201).—Swimming Echinoderms (v, p. 23), creeping Echinoderms (v, p. 90, figg.); DAVIS (68). (b) *Synapta* movements; SAFFORD (284) p. 89. (d, e, f) Climbing of *Ast.* (v, p. 231), of *Oph.* and *Crin.* (v, p. 278), Locomotion of *Oph.* (v, p. 114); DAVIS (68).
- vii. **Autotomy and Regeneration**:—(a) Autotomy; LUKAS (201).—Regeneration, experimental; MAAS (202) p. 98: and teratogenesis; PRZIBRAM (262). (b) Autotomy or division above coil of gut produces a straight gut, in *Synapta*; ØSTERGREN (235) pp. cxxxv, cxlv. (c) Pluteus of *Mellita testudinata* lacks this faculty almost wholly; GRAVE (119). (d) Regeneration, *Ast.*; MCINTOSH (204): DAVIS (68) VI, p. 328.—Forked disc-appendage probably due to regeneration, in *Porcellanaster pacificus*; LUDWIG (197) p. 80. (e) Rate of regeneration of rays in *Ophioglypha*; ZELENY (339) pp. 7-17: more rapid the greater the injury; ZELENY (340). (f) Regenerated parts of a lighter colour than the older parts, in arms of *Antedon* (p. 178), regeneration of cirri, of disc [i.e. tegmen and viscera], of pinnules, of rays [i.e. brachia], of arms [i.e. finials], the last being either simply reproductive or augmentative (pp. 187-205); in *Antedonidae* and *Actinometridae* all arm-branching after the first is due to augmentative regeneration (pp. 210-232), syzygies and modified articulations are predestined planes of autotomy, hypozygals are predestined bases of regeneration (pp. 232-240); MINCKERT (214).—Regeneration of cirri in *Promachocr.* (p. 501), of arms in *Promachocr.* and *Decametrocr.* contrasted (p. 493); MINCKERT (213).
- viii. **Parasites and Commensals**:—(a) PÉREZ (246).—Resemblance of their position to that of the young; GIARD (110) p. 256. (b) *Gasterosiphon* (olim *Entosiphon*), gastropod in *Deima blakei*; KOEHLER & VANEY (164) p. 56. (c) *Pinnaxodes chilensis*, Decapod Crustacean in rectum *Strongylocentrotus*; ORTMANN (234) p. 697.—*Eumedon*, a crab commensal in apical region of *Echinothrix*; BOUVIER (37). (d) *Myxostoma fisheri* in body-cavity of *Tosia leptocera* Fisher, S. California; WHEELER (327): FISHER (92) p. 307.—*Dendrogaster*, cirripede in body-cavity of *Dipsacaster* and *Echinaster*; LE ROI (182).—Branched parasite, nondescr., in *Persephonaster armiger*, perhaps parasitic castration; LUDWIG (197) p. 41. (e) Gastropod on *Ophiothrix stelligera*; KOEHLER (160) p. 87.—A Chaetopod, *Ophiuricola cynips*, parasitic on arms of *Ophioglypha tumulosa*; LUDWIG (198). (f) *Myxostoma* on *Antedon*; GRAEFFE (117).—Coral, *Monilopora amplexa* causing swellings on *Crin.* stems, esp. *Platycr.*, also constriction of stems by *Bryozoa*; ROWLEY (282) p. 304.

- ix. **Echinoderms as Food**:—(a) DAVIS (68) VII, p. 217. (b) *Stichopus* and *Cucumaria* food of *Gadus callarias*, *Phyllophorus* food of *G. aeglefinus*; NORDGAARD (230) p. 161.—*Thyone fusus* in *Scyllium*; KEMP (152) p. 178.—*Hol.* as food of man; KONINGSBERGER (166). (c) *Toxopneustes* as food of *Anarrhichas lupus* (p. 183); DITLEVSEN (77) *Amphidetus cordatus* as food of *Hippoglossoides platessoides* (p. 205); HØRRING (142). (e) *Ophiopholis aculeata* as food of *Gadus callarias* (p. 193), ditto and *Ophinglypha albida* as food of *Hippoglossoides platessoides* (p. 205); HØRRING (142): *Oph.*, of *H. platessoides*; DITLEVSEN (77) p. 206.
- x. **Echinoderms in Geological Aspect**:—Relations of Echinoderm remains to dolomitization; SKEATS (302) pp. 124, 135.—Pseudogaylussite and *Ech.* tests; MACNAIR (205).—*Crin.* as rockformers Trias and Lias of E. Alps; ESCHER-HESS (89).—Crinoid Limestones of Liassic (p. 268), Lower Cretaceous (pp. 271–274), and Upper Cretaceous (pp. 273, 274) of Unterengadin; PAULCKE (243).

(E.) MISCELLANEOUS.

i. **Research and Instruction**:—

- a. **Preservation**:—Collection and preservation of littoral Echinoderms; FURNEAUX (102A) p. 79.—Curious methods of collecting foss. *Ech.*; SAVIN (286) p. 111.—Formol dangerous for Echinoderms; BELL (26) p. 241.—Staining pluteus of *Echinus* for study of spicules; WOODLAND (344) p. 308.
- b. **Methods of research**:—Importance of biometry in taxonomy; EDWARDS (88).—Method of measuring spicules in *Synapta*; ØSTERGREN (235) p. cxxxvii.—Decalcification and staining, *Pentacr.*; REICHENSBERGER (267).—Study of axial organ in *Ast.*, decalcification; PIETSCHMANN (256).—Celloidin paraffin sections of yolky ova; HENDERSON (134).
- c. **Museum Exhibits and Collections**:—Boston, Mass., museum guide, *Echinoderma* recent and fossil; SHELDON (299) pp. 145–195.—Tübingen Geol. Mus. Guide, mentions Echinoderms in collection, esp. *Pentacr. subangularis*; KOKEN (165).—Nicholson Institute, Leek, Staffs., Carboniferous *Crin.*; WARDLE (331).—Types of Cretaceous *Ech.*, *Ast.*, *Crin.* at Acad. Nat. Sci., Philadelphia; JOHNSON (146).—List of type-specimens of fossil *Echinoderma* in U. S. NAT. MUS. (322): of fossil *Pelmatozoa* in State Mus. N. Y.; CLARKE (57 & 60).
- d. **Instruction**:—Text-books; GROBBEN (124), HERTWIG (136 & 136A), PORTER (259).—Elementary account and guide to practical work of recent Echinoderms, esp. starfish and sea-urchin; COLTON (62) i, p. 331, ii, p. 177.—Dissection of Starfish and Sea-urchin, and Holothurian; WEED (332).—Characteristic fossils; FRAIPONT (99).—Guide to experimental morphology; PRZIBRAM (262).—Ditto, embryology; MAAS (202).
- ii. **Economics**:—see II, D, ix, Echinoderms as food.—Commercially valuable spp. of *Hol.*, districts of trepang-fishery in Dutch E. Indies; KONINGSBERGER (166) pp. 26 et sqq.—*Ech.* as “personal enemies” of man; DAVIS (68) VIII, p. 344.—*Asterias* diminishes numbers of *Pleuronectes platessa* by eating their molluscan food, its value as manure; PETERSEN (253).
- iii. **Bibliography**:—Literature for 1893 abstracted; BERGMANN (30): for 1905; LUDWIG (200): of *Crin.*; HAMANN (129) pp. 1431–1441: of Arctic *Ech.*; DOEDERLEIN (79) p. 393: of Arctic *Crin.*; DOEDER-

LEIN (80) pp. 405-406.—Troost's unpublished monograph on fossil crinoids of Tennessee; CLARKE (59) & GLENN (114) p. 79.—Account of S. A. Renier, Tavola alfabetica delle conchiglie adriatiche, especially as bearing on Molluscan and Echinoderm name *Discoidea*; BATHER (19).

- iv. **Historical, Popular notions, &c.**:—History of opinion concerning axial organ; PIETSCHMANN (256).—History of discovery, *Crin.*; HAMANN (129) pp. 1442-1444.—Troost's monogr.; CLARKE (59) and GLENN (114).

Popular names at Skerries, Co. Dublin, Crossâne for *Uraster rubens*, Morane for *Ophiura albida*; COLGAN (61) p. 213.—Popular names of the commoner New England Echinoderms; CLARK (55).—Lapp names for *Echinus*, *Asterias*; QVIGSTAD (264) pp. 386, 387.—Native names for *Hol.* spp. in use in Malaysia; KONINGSBERGER (166) pp. 27-34, et passim.

(F.) AUXOLOGY.

- i. **General Principles**:—Growth in general; PRZIBRAM (262).—Different modes of development—poecilogony—in the same or closely allied species, how originating; GIARD (111) p. 621.
- ii. **General Accounts**:—(a) Life histories; DAVIS (68) VI, p. 354, figg. (b) semipopular, in Dutch; KONINGSBERGER (166) pp. 13-18, pla. iv, v.
- iii. **Formation of Gonads**:—(a) Spermatozoa of *Antedon*, *Briassopsis*, *Mesothuria*; RETZIUS (275). (b) Lining cells of genital caeca develop supporting cells and glandular cells which assist the nutrition of the gonads and the embryo, *Phyllophorus*; RUSSO (283). (c) Glandular elements associated with spermatozoa in *Strongylocentrotus*; RUSSO (283).—Ovum of *Paracentrotus*, pigment ring and relations to axis, polarity of *Ech.* ovum; GARBOWSKI (107). (d) Maturation due to hunger of the ovum, ova of *Asteracanthion* ripened by removal from ovary; HERTWIG (137) p. 202.
- iv. **Oviposition, Fertilisation, and Segmentation**:—Time of breeding-season for *Hol.*; KONINGSBERGER (166) pp. 19-22.—Breeding period of *Asterina fimbriata* (p. 63), two breeding periods per annum in *Cycethra verrucosa* (p. 58); LUDWIG (199).—Fertilisation, summary of recent work, esp. Buller and Giardina; LOISEL (193).
- v. **Larval Stages**:—(a) McINTOSH (204). (c) Pigmentation of larva, its increase by hybridisation; GARBOWSKI (107) p. 613.—Rearing larvae of *Echinus esculentus*; WOODLAND (344) p. 306. (d) Early stages of an Asterid with yolky eggs, anatomy, histology; HENDERSON (134).
- vi. **Organogeny**:—(c) *Echinoidea*:—(10) Origin of mesenchyme in *Echinus*, protoplasmic continuity of cells; WOODLAND (344) p. 308.
- vii. **Post-larval Growth-stages**:—(b) Increase in number of polian vesicles and stone-canals with age in *Holothuria*; EDWARDS (88). (c) Neanic *Micraster coranguinum* 11 to 50 mm. long, studied with reference to development of ambulacra, plastron, apical system, periproct, peristome, and fasciole; VALETTE (324) p. 40. (d) Young stages of *Pararchaster pectinifer* (p. 16), of *Archaster typicus* (p. 53), *Asterina cepheus* (p. 157), *Zoroaster* (p. 177), *Z. longispinus* (p. 183); LUDWIG (197); of *Asterodon*, *Odontaster*, *Porania*, *Cycethra*, *Asterina*; LUDWIG (199). (e) Young stages of various *Oph.*, see list of genera III, A, iii; KOEHLER (160).

viii. Developmental mechanics and Experimental Embryology:

General account; MAAS (202).—General chapters on die Zeugung, die notwendigen Stoffe, der Eibau; PREIBRAM (262).—Echinoderm ovum and sperm-ovum illustrating cellular mechanics, segmentation, and development; GURWITSCH (125) *passim*, with figg. after previous authors.—Experiments on segmentation, differentiation of tissues and organs, illustrated by *Ech.* and *Ast.*; MAAS (202) pp. 24, 84.—Mesenchym-composition in *Ech.* larvae developed from inharmoniously united blastomeres; DRIESCH (86).—Equipotence of ectoderm and endoderm in larva of *Asterias* and *Astropecten*, larvae from fragments; DRIESCH (87).—Relation of size and number of cells in larvae to chromosomes of ovum; experiments on *Echinus* and *Strongylocentrotus*; BOVERI (38): same continued by doubly fertilised *Ech.* ova; BOVERI (39).—Modification of segmentation by artificial increase of yolk; SANZO (285).—Retardation of development by increased temperature; PETER (251).—*Sphaerechinus* gastrulae developing rapidly in warmth vary in number of mesenchyme-cells more than do those developing slowly in cold; PETER (252).—Effect of removal of oxygen on segmentation of sperm-ova of *Arbacia*; LOEB (184).—Action of spectrum rays, of ultraviolet light, of diffuse light on mitosis of sperm-ova of *Echinus microtuberculatus*; HERTEL (135).—Lithium bromide produces exogastrulation in *Ech.*; GARBOWSKI (106).—Effects of acid, alkali, phenol-phthalein, and di-methyl-anido-azo-benzol on sperm-ova of *Echinus*; WHITLEY (340): ditto, and comparison with cell-growths in malignant disease; MOORE (217).

Hybridization:—BOVERI (38).—*Echinus*, *Strongylocentrotus*, and *Sphaerechinus* ♀ × *Antedon* ♂, and vice versa, brought to plutei, mother-characters only, also gastrulae from enucleated *Ech.* ova × *Antedon*; GODLEWSKI (115).—*Echinus esculentus*, *Paracentrotus lividus*, and *Parechinus miliaris* in various combinations, Plutei without entoderm from *Echinus esculentus* ♂ and *Paracentrotus lividus* ♀; GARBOWSKI (106).—*Paracentrotus lividus* ♀ × *Spatangus purpurus*, *Sphaerechinus granularis*, and *Parechinus microtuberculatus*; GARBOWSKI (107) p. 614.

Artificial Parthenogenesis:—General discussion; ARIOLA (12A).—General summary of recent work, esp. Ariola, Viguier, Loeb, Delage; LOISEL (193).—Summary and discussion of results obtained by Loeb et alii; VERWORN (327).—General discussion of physico-chemical theory of fertilisation; FISCHER (91A).—General discussion as to importance of nucleus; ARIOLA (12B).—Methods of inducing parthenogenetic development of *Ech.* ova; DRIESCH (85) p. 649.—Action of various salts and different concentrations on *Asterias* ova, fused blastulae; DELAGE (70).—*Asterias* ova, increase of osmotic pressure not necessary, segmentation proceeding to blastula in a pure solution of manganese chloride, action of other salts, addition of calcium carbonate to carbonic acid produces fusion of numerous blastulae; DELAGE (71).—Influence of temperature, of acid, on *Ech.* and *Ast.* ova, *Ast.* larva lives 4 months 19 days; DELAGE (72).—Merogonic development sperm-ova *Psammechinus* and *Strongylocentrotus*, mitosis, cellular autotomy; KRAHELSKA (168).—Piéri's ovulase disproved by experiments with *Strongylocentrotus lividus*; PIZON (257).—Artificial formation of membrane in unfertilised ova of *Strongylocentrotus* produced by concentrated solutions; LOEB (185): ditto by hypertonic sea-water and ethyl acetate, resulting in normal development; LOEB (186): Remarks on preceding; BOHN (34): Similar results by substituting acetic, formic, or carbonic acid for ethyl acetate; LOEB (187 & 188): ditto, by fatty acid, segmentation after subsequent exposure to hypertonic sea-water for a shorter period, discussion of membrane-

forming acids; LOEB (189): ditto, development in *Asterina*, compared with *Strongylocentrotus* and *Arbacia*; LOEB (190).—Theory of antagonistic action of various salts; LOEB (191).—Artificial fertilisation ova of *Moera atropos*; GRAVE (119).—Cytology of parthenogenetic larvae of *Strongylocentrotus* and *Echinus*; DRIESCH (85).—Reply to BOHN, G.; VIGUIER (328).—Reply to LOISEL (193), parthenogenetic and fertilized *Ech.* ova compared; VIGUIER (329).—See further: BATAILLON (17); BIGNEY (31); BOVERI (38): *Act.*; GARBOWSKI (105).

III. DISTRIBUTION*.

A. GEOGRAPHICAL.

- i. **General**:—Distrib. dependent on hydrographical conditions and bottom, evidence from Norwegian Echinoderms (pp. 229–244), *Asterias rubens*, transported by tidal current (p. 232); NORDGAARD (230).—Bipolarity discussed with reference to (inter alia) *Hol.* after Theel; BORCHGREVINK (36A) p. 530.—Bipolarity, *Psolus squamatus* alone among *Hol.*, general discussion of question; FERRIER (249) pp. 65, 124.
- ii. **Atlantic Ocean and adjacent Seas**:—*Oph.* new to this Ocean are *Ophioglypha flagellata*, *O. inornata*, *O. clemens*, *Ophiotypa simplex*, *Ophiacantha valenciennesi*, many others are listed; KOEHLER (159).—Distrib. of *Peltaster nidarosiensis*; GRIEG (121) p. 11: of *Pentagonaster granularis*; GRIEG (122) p. 11.
 North Atlantic, Sub-Arctic, vide III, A, v; DOEDERLEIN (79 & 80).—Iceland, *Cucumaria*, *Trochostoma*, *Echinocucumis*, *Benthodytes*, *Strongylocentrotus*, *Brisopsis*, *Dorocidaris*, *Stereocidaris*, *Porocidaris*, *Phormosoma*, *Calveria*, *Sperosoma*, *Echinus*, *Pourtalesia*, *Asterias*, *Ctenodiscus*, *Cribrella*, *Bathybiaster*, *Solaster*, *Hymenaster*, *Pontaster*, *Astropecten*, *Goniaster*, *Zoroaster*, *Pentagonaster*, *Mimaster*, *Retaster*, *Pararcha-ter*, *Astrogonium*, *Pteraster*, *Freyella*, *Ophioglypha*, *Ophiopholis*, *Ophiacantha*, *Ophiopleura*, *Ophioscerox*, *Gorgonocephalus*, *Ophiocten*, *Ophiactis*, *Amphiura*, *Amphilepis*, *Ophiomusum*, *Antedon*; SCHMIDT (291) pp. 18–24.—S. of Iceland, *Urechinus*, *Hemiaster*, and *Pourtalesia* n. sp.; MORTENSEN (220).—Faeroes and Iceland, *Cucumaria*, *Psolus*, *Echinus*, *Strongylocentrotus*, *Amphidetus*, *Sputangus*, *Asterias*, *Cribrella*, *Solaster*, *Ophiopholis*, *Ophiacantha*, *Ophioglypha*; HØRRING (142).
 Norway:—Fauna of fjords; NORDGAARD (230).—*Synapta* & *Labidoplax* n. spp.; ØSTERGREN (235).—Trondhjem Fjord, locc. for various Echinoderms; STORM (309).
 N. Sea: Echinoderm Plankton. See Bull. d. Resultats Conseil. Internat. p. l'explor. de la mer, 1903–04, Nos. 1–4, Partie d.—Off Helgoland, *Rhabdomolgus*; LUDWIG (196).
 British Coasts:—Firth of Clyde, *Auricularia*, *Bipinnaria*, *Pluteus*; BROWNE (43).—Luce Bay, various Echinoderms; JOHNSTONE (147) p. 221.—Near Plymouth, *Phyllophorus drummondi*, *Cucumaria montagui*; NORMAN (232).—Plymouth, Dartmouth, and Galway, *Ophiopila*; NORMAN (233).—Irish Sea larval Echinoderms; SCOTT (296).—Irish Sea, Skerries, Co. Dublin, *Comatula*, *Ophiura*, *Ophiocoma*, *Uraster*, *Solaster*, *Asterias*, *Echinus*, *Amphidotus*; COLGAN (61).—Ballynakill and Bofin Harbours, Co. Galway, *Synapta*, *Cucumaria*, *Thyone*, *Holothuria*, *Antedon*, *Astropecten*, *Asterina*,

* For the species found, refer to generic names under IV.

Henricia, *Asterias*, *Ophiura*, *Ophiocnida*, *Amphiura*, *Ophiocoma*, *Ophiothrix*, *Echinus*, *Strongylocentrotus*, *Echinocyamus*, *Spatangus*, *Echinocardium*; KEMP (152).—W. Coast Ireland, outside 50 fm. line, *Synapta*, *Cucumaria*, *Thyone*, *Psolus*, *Phyllophorus*, *Holothuria*, *Stichopus*, *Laetmogone*, *Rhizocr.*, *Antedon*, *Pontaster*, *Plutonaster*, *Astropecten*, *Psilaster*, *Luidia*, *Pentagonaster*, *Nymphaster*, *Porania*, *Cheilaster*, *Palmites*, *Stichaster*, *Neomorphaster*, *Zoroaster*, *Solaster*, *Pteraster*, *Hymenaster*, *Henricia*, *Asterias*, *Brisinga*, *Ophiura*, *Ophiocten*, *Ophiociton*, *Ophiomusium*, *Amphiura*, *Ophiactis*, *Ophiopholis*, *Ophiacantha*, *Ophiocoma*, *Ophiothrix*, *Ophiobyssa*, *Cidaris*, *Asthenosoma*, *Phormosoma*, *Echinus*, *Echinocyamus*, *Spatangus*, *Echinocardium*, *Brissopsis*; KEMP (152).

Rockall, complete list, *Cucumaria*, *Thyone*, *Holothuria*, *Antedon*, *Pontaster*, *Plutonaster*, *Astropecten*, *Luidia*, *Hippasteria*, *Stichaster*, *Henricia*, *Brisinga*, *Ophiura*, *Ophiactis*, *Ophiopholis*, *Ophiothrix*, *Cidaris*, *Asthenosoma*, *Echinus*, *Spatangus*, *Pourtalesia*; KEMP (152).

French Coasts :—Boulonnais, *Echinus*; HALLEZ (128) p. 1.—Cotentin, Echinoderm fauna; FAUVEL (90).—Off Arcachon, *Pseudocucumis* n. sp.; KOEHLER & VANEY (163).

Mediterranean :—near Cette. List of *Crin.* (p. 58), *Ast.*, *Oph.*, *Ech.*, *Hol.* (p. 59); CALVET (45).—Balearic Is., Echinoderms; BUEN (44).—G. of Palermo, *Arbacia*; CHECCHIA (49).

Portugal, additions to Echinoderm fauna; NOBRE (228) p. 82, and (229) pp. 132–134.

Near Canaries, *Pentacr.*, *Benthodytes*, and between Canaries and Azores, 5413 m., *Hyphulaster*, *Neomorphaster*; ALBERT (9): 400–5413 metres, ditto and *Salenia* and *Styracaster*; RICHARD (276) pp. 3, 4.

America, New England Coast, list of spp. of *Hol.*, *Ech.*, *Ast.*, *Oph.*, with locc. and depths; CLARK (55).—Anticosti, season, bottom, and depth of *Asterias*, *Solaster*, *Crossaster*, *Ophiopholis*, *Strongylocentrotus*, *Pentacta*, *Psolus*, *Chirodota*: N. of G. St Laurence, *Astrophyton*, *Echinarachnius*; SCHMITT (292).

iii. **Indian Ocean and adjacent Seas** :—Deep-Sea *Hol.* of 'Investigator,' *Mesothuria*, *Synallactes*, *Bathyplores*, *Pelopatides*, *Benthothuria*, *Dendrothuria* n. g., *Pseudothuria* n. g., *Allopatides* n. g., *Perizona* n. g., *Bathyzona* n. g., *Oneirophanta*, *Amphideima* n. g., *Ophnurgus*, *Benthophycus* n. g., *Peniagone*, *Benthothuria*, *Dendrothuria* n. g., *Pseudothuria* n. g., *Allopatides* n. g., *Perizona* n. g., *Bathyzona* n. g., *Oneirophanta*, *Amphideima* n. g., *Euriplores* n. g., *Benthodytes*, *Euphronides*, *Psychropotes*, *Gephyrothuria* n. g., *Fili-thuria* n. g., *Psolidium* (?), *Psolus*, *Trochostoma*, *Ankyroderma*, *Protankyra*, and *Anapta*, all with n. spp., also *Pseudostichopus*, *Laetmogone*, *Apodogaster*, *Deima*, and *Ypsilothuria*: comparison of Indian Ocean fauna with that of Sunda Archipelago (p. 6) and with others [Station 199 appears to be in the middle of Ceylon, vide sub *Ankyroderma* et *Trochostoma*]; KOEHLER & VANEY (164).

Red Sea, n. sp. of *Gymnechinus* and list of common *Ech.*, *Ast.*, *Oph.*; KOEHLER (161).—G. of Aden, *Phormosoma* n. sp.; DOEDERLEIN (78).

Off E. Africa down to Cape Colony, and Agulhas current, *Orechinus* n. g., *Palaeolampas*, and n. spp. of *Phormosoma*, *Hygrosoma*, *Sperosoma*, *Lamprochinus* n. g., *Paracentrotus*, and *Spatangus*; DOEDERLEIN (78).—Somali Coast, *Thyone*, *Phyllophorus*, *Holothuria*, *Muelleria*, *Chondroclaea*, and n. spp. of *Cucumaria* and *Colochirus*; VANEY (326).

S. Africa, S. and E. coasts, various locc., *Ophioderma*, *Amphiura*, *Ophiothamnus*, *Ophiothrix*, *Ophioscolex*, *Gorgonocephalus*, and n. spp. of *Ophiozona* and *Ophiura*; BELL (25): *Pseudarchaster*, *Leptoptychaster*, *Astropecten*, *Psilaster*, *Luidia*, *Pentagonaster*, *Calliaster*, *Culcita*, *Stichaster*, *Solaster*, *Retaster*, *Hymenaster*, *Henricia*, *Asterias*, *Asterina*, *Echinaster*, and n. sp. of *Palmipes*, fauna allied to both N. Atlantic and Indian Ocean; BELL (26): *Antedon* n. spp., *Actinometra*; BELL (27).

Distrib. in Dutch E. Indies of commercial spp. of *Muelleria*, *Stichopus*, *Holothuria*; KONINGSBERGER (166).—Off Sumatra, *Pygmaecocidaris* n.g., and n. spp. of *Phormosoma* and *Palaeolampas*; DOEDERLEIN (78).—Littoral *Oph.* of 'Siboga', *Pectinura*, *Ophiopoeza*, *Ophiocoris*, *Ophiozona*, *Ophioglypha*, *Ophiactis*, *Ophiocnida*, *Amphiura*, *Ophiacantha*, *Ophiomastix*, *Ophiothrix*, *Ophiopteron*, *Ophiocampsis*, *Ophiopammium*, *Ophiodes*, *Ophioglyptis* n.g., *Astrophyton*, *Astrochalcis* n.g. all with n. spp., also *Ophiopoezella*, *Ophioplepis*, *Ophioplocus*, *Ophiostigma*, *Ophiopsila*, *Ophionereis*, *Ophiocoma*, *Ophiarachna*, *Ophiarthrum*, *Ophiomaza*, *Ophiocnemis*, *Ophiokela*, *Ophiomyxa*, *Astrochema*, *Euryale*, and *Sthenocephalus*, and *Ophiothrix* n. sp. 274 m.; KOEHLER (160).—Diego Garcia, *Mortensenia* n.g. *Ech.*; DOEDERLEIN (78).

New Amsterdam [?S. Indian Ocean, not Guiana], *Notechinus* n.g.; DOEDERLEIN (78).

- iv. **Pacific Ocean and adjacent Seas**:—Alaska, n. spp. of *Mimaster*, *Pseudarchaster*, *Hippasteria*; FISHER (92).—Monterey Bay, Cal., 120 metres, *Psolus* n.sp.; FISHER (93).—Off California, n. spp. of *Porcellanaster*, *Bathybiaster*, *Dipsacaster*, *Persephonaster*, *Benthopecten*, *Dytaster*, *Odontaster*, *Pseudarchaster*, *Tonia*, *Mediaster*, *Hippasteria*, *Cryptopeltaster* n.g., *Lophaster*, *Peribolaster*, *Pteraster*, *Hymenaster*, *Zoroaster*, *Brisinga*, *Freyella*; FISHER (92).

E. Pacific, *Hol.*, *Ech.* at great depths (2), various locc., *Acete*, *Aérope*, *Ankyroderma*, *Deima*, *Scotoplanes*, *Psychropotes* (3 & 4), *Benthodytes*, *Freyella*, *Brisinga* (4); AGASSIZ.—Pacific, Albatross, 1891, with depths, temperature, and bottom, n. spp. of *Cheiraster*, *Pararchaster*, *Plutonaster*, *Persephonaster*, *Dytaster*, *Psilaster*, *Astropecten*, *Parastropecten* n.g., *Luidia*, *Porcellanaster*, *Albatrossia* n.g., *Pseudarchaster*, *Mediaster*, *Nymphaster*, *Pentagonaster*, *Hippasteria*, *Pauliella* n.g., *Zoroaster*, *Sarkaster* n.g., *Hymenaster*, *Retaster*, *Cribrella*, *Alexandaster* n.g., *Pedicellaster*, *Stolasterius*, *Sporasterias*, *Hydrasterias*, *Brisinga*, and *Freyella*, also *Ctenodiscus* and *Paulia*; LUDWIG (197).—S. W. of Callao, *Ophioglypha tumulosa*, 5203 m.; LUDWIG (198).—Chile, *Arbacia*; PORTER (260).

Off Korea, n. spp. of *Myriotrochus* and *Eupyrus*, ØSTERGREN (236).

Tropical Pacific, Albatross 1899–1900, *Archaster*, *Astropecten*, *Hyphalaster* n.sp., *Culcita*, *Gymnasteria*, *Asterina*, *Linckia*, *Ophidaster*, *Acanthaster*, *Mithrodia*, *Brisinga* n.sp. *Freyella* n.sp.; LUDWIG (197).—Ladrones, Guam Id., *Synapta* and other echinoderms; SAFFORD (284) p. 89.

Australia: 300 fm. 28 miles east of Sydney Heads, *Pannychia*; HEDLEY (133).—New Zealand, *Stichopus*, *Cucumaria*, *Pseudopsolus*, *Phyllophorus*, *Trochodota* and n. sp. of *Caudina*; PERRIER (249).

- v. **Arctic Ocean and adjacent Seas**:—Arctic and sub-Arctic *Ech.* geogr. and bathymetric distrib., also temperature, comparison with Antarctic; DOEDERLEIN (79): ditto, *Crin.*; DOEDERLEIN (80).—Barents Sea, Echinoderm fauna; BREITFUSS (40).—Denmark Str., *Pterechinus* n.sp., Davis Str., *Powrtalesia* n.sp.; MORTENSEN (220).—N. W. of Jan Mayen, *Myriotrochus* n.sp.; ØSTERGREN (235).

vi. **Antarctic Ocean and adjacent Seas**:—*Ech.* and *Crin.* fauna compared with Arctic, vide III, A, v ; DOEDERLEIN (79 & 80).

C. Horn and neighbourhood, *Synallactes*, *Stichopus*, *Cucumaria*, *Thyone*, *Psolidium*, *Psolus*, *Caudina*, *Trochodota*, *Chiridota* ; PERRIER (249).—Kerguelen, *Trochostoma* ; PERRIER (249) p. 65.—S. Patagonia, Swedish Exped. 1895–97, *Asterodon*, *Odontaster*, *Porania*, *Cycethra*, *Asterina*, *Solaster*, *Retaster*, *Cribrella*, *Comasterias*, *Sporasterias*, *Labidiaster*, *Ophioglypha*, *Ophiactis*, *Amphiura*, *Ophiomyza* ; LUDWIG (199).

Antarctic continent littoral:—Two figures from photographs of *Oph.*, one with young, both labelled “Seestern” ; BORCHGREVINK (38A) pp. 518, 519.—“Discovery,” *Echinus*, *Cycethra*, *Hemiasiter*, *Cucumaria*, *Asterias*, *Ophiostera*, *Ophionotus* ; HODGSON (141) and LENDENFELD (179).—German S. Pole Exped., n. spp. of *Urechinus*, *Platychinus*, and *Amphipneustes* ; MORTENSEN (220) : *Promachocr.* n. sp. ; MINCKERT (213).

B. GEOLOGICAL.

(i) GENERAL.

“Les Echinides ne permettent généralement pas de déterminer l'âge des couches avec une grande précision” ; DOUVILLÉ (83) p. 12.

Palaeozoic to Cainozoic of Tarbes and Luz in French Pyrenees, lists of Echinoderms ; CAREZ (46) pp. 798, 831, 858, 895, 935.—Sahara, list of specimens collected ; FOUREAU (96) pp. 734, 735.

(ii) CAINOZOIC.

a. **General**:—Japan, *Echinolampas* ; YABE (336).—Patagonia, lists of *Ech.* ; AMEGHINO (10) pp. 88, 162.

b. **Pleistocene**:—Post-glacial *Ech.* tests in nodules with pseudogaylussite in R. Clyde ; MACNAIR (205) p. 254.—Loch Fyne, *Echinus*, *Echinocardium* ; NEWTON (225).—Yoldia Clay, Esbjerg, *Psolus*, *Ophioglypha* ; NORMANN (231).—C. d'Espichel, Portugal, *Echinus*, *Strongylocentrotus* ; CHOFFAT (52).—(Lower), Otranto, *Antedon*, *Schizaster*, *Spatangus* ; BASSANI (16).—Glacial “Leda clay,” Lynn, Essex Co., Mass., *Asterias*, *Asteracanthion* ; SEARS (297) p. 369.—New Hebrides, Cinder Beds at Epi, *Brisus*, *Clypeaster*, *Laganum* (p. 414), Tasiriki on Santo, *Brisus* (p. 451) ; MAWSON (211).

c. **Pleiocene**:—Mt. Gargano, *Cidaris* ; CHECCHIA (48).—Djerf el Ihoudi, Morocco, *Rotuloidea* ; BOISTEL (35).—Sables d'Edeghem, Belgium, *Cidaris*, VAN ERTBORN (325).

d. **Meiocene**:—Carcare, Piedmont, *Clypeaster* n. sp. ; AIRAGHI (8) p. 212.—Corsica, *Brisopsis* ; AIRAGHI (6).—Angola, *Amphiope* ; CHOFFAT (50) p. 43.—Africa, Loanda, *Amphiope* n. sp. (p. 133), Oran, *Echinolampas* n. sp. (p. 135) ; LORIOL (195).—New Zealand, Oamaru series, Black point, *Schizaster* (p. 521), Wharekuri basin, *Crin.* col. (p. 527), Mount Brown beds, *Cidaris* (p. 539), Port Hills, Nelson, *Cidaris* (p. 550) ; PARK (241).

Upper.—Chalonnnes (Maine-et-Loire) *Arbacia* ; COUFFON (63).

Middle.—S. Maria Tiberina, Umbria, *Pentacr.*, *Antedon*, *Cidaris*, *Arbacia*, *Echinocyamus*, *Clypeaster*, *Pliolampas*, *Conolampas*, *Echinolampas*, and n. spp. of *Muretia* and *Pliolampas* ; AIRAGHI (5).—Helvetian, —N. Sarlinia, *Clypeaster*, *Echinolampas*, *Heterodypus*, *Schizaster*, *Brisus*, *Hemiasiter* ; AIRAGHI (8).—C. Pyla, Cyprus, *Clypeaster* ; BATHER (90) ; BATE (18) ; BELLAMY (28) p. 27.

Lower.—Upper Mediterranean of Ostroski-Vepor Gebirges, *Cidaris*,

Clypeaster, *Conoclypus*, *Echinocyamus*, *Goniaster*, *Scutella*, *Schizaster*, *Spatangus*; GAÁL (103).—Burdigalian, —Alpes-maritimes, n. spp. of *Brissoides*, *Mareia*; LAMBERT (173).—Isère, *Cidaris*, *Echinolampas*, *Spatangus*; SAVIN (286).

- e. **Oligocene**:—Stampian, Gironde, *Stenaster* n.g. et sp.; LAMBERT (171) p. 140.—Kasić, N. Dalmatia, *Porocidaris*; SCHUBERT (293) p. 165.

- f. **Eocene**:—Ostliche Kientaleralpen, Switzerland; GERBER (109).—Fumane, Grola, and Novale, Italy, *Echinanthus*, and n. spp. of *Conoclypeus*, *Schizaster*, *Cyclaster*, *Echinolampas*; AIRAGHI (6).—Verona, *Psammechinus excavatus*; LORIOL (195) p. 131.—Basin of R. Adour, chiefly Biarritz, horizons of *Cidaris*, *Clypeaster*, *Euspatangus*, *Scutella*, *Coptosoma*, *Pygorhynchus*, *Echinolampas*, *Ditremaster*, *Oriolampas*, *Macropneustes*, *Echinocyamus*, *Porocidaris*, *Pentacr.*, *Conocr.*; DOUVILLE (83).—Catalonia, n. spp. of *Coptosoma*, *Triplacidia*, *Echinanthus*, *Schizaster*, *Euspatangus*; LORIOL (195).—Cernica, Galicia, *Porocidaris*, *Conocr.*; HAWELKA (131).—Persia, list of *Ech.*; MORGAN (218).—Egypt, —*Euspatangus*, *Perispatangus* n. sg., *Heterospatangus* n. g., *Fourtaunia*, *Hypsospatangus*, *Megapneustes*, *Plagiopneustes* n. g., *Macropneustes*, *Plesiospatangus*; FOURTEAU (97): *Rhabdocidaris* with n. sp., *Echinolampas*, *Amblypygus*, *Pericosmus*, *Ditremaster*, *Schizaster*, with n. sp., *Linthia*; FOURTAU (98).—Makamby Id., Madagascar, n. spp. of *Fibulina* n. g., *Fibularia*, and *Schizaster*; TORSQUIST (316).—Eocene?, Somaliland, *Conoclypeus*?, and from Garrasgoi Mt. *Schizaster* and *Linthia*?; NEWTON (227) pp. 157, 173.—Eocene?, *Ech.* in limestone at Tokpli, Nigeria, compared with *Ech.* from Sokoto; AMMON (12) pp. 469, 471.—Corrio Bay, Victoria, *Scutellina*, *Antedon*; MULDER (222).—Lower Oamaru, Papakura, N. Zealand, *Schizaster*; CLARKE (56).

Upper.—W. Roumania, *Cidaris*, *Bourguetier*.; MURGOCI (223).

Middle.—Lower Lutetian, Nummulitic, Hérault, list of *Ech.*;

MIQUEL (215): of Aude and Hérault, S. France, *Conocr.*, *Cidaris*, *Rhabdocidaris*, *Heteractis*, *Coptosoma*, *Micropsidia*, *Thylechinus*, *Baueria*, *Echinopsis*, *Rhabdopleurus*, *Hypsospatangus*, *Linthia*, *Schizaster*, *Prenaster*, *Eolampas*, *Amblypygus*, *Oriolampas*, *Cassidulus*, *Plagiopygus*, *Echinanthus*, *Conoclypeus*, and n. spp. of *Circopeltis*, *Brissoides*, *Macropneustes*, *Linthia*, *Schizaster*, *Ilarionia*, *Echinolampas*, *Porpitella*; DONCIEUX (81): LAMBERT (171).—Nummulitic, Carinthia, *Cidaris*, *Echinanthus*, *Linthia*, *Echinolampas*, *Cyphosoma*, *Conoclypeus*, *Ilarionia*, *Pyrina*, *Pygorhynchus*, *Macropneustes*; REDLICH (266) pp. 342, 343.—Ostrovica, N. Dalmatia, *Micropsis*, *Leiopodina*, *Schizaster*, *Macropneustes*, *Trachypatagus*, *Euspatangus*, *Porocidaris*; SCHUBERT (293) p. 168.—Ljubac, N. Dalmatia, *Porocidaris*, *Echinanthus*, *Leiopodina*, *Conoclypus*, *Euspatangus*, *Schizaster*; SCHUBERT (294).—Fayum, Egypt, *Euspatangus*, *Echinolampas*, *Aniaster*, *Dictyopleurus*, *Schizaster*; BEADNELL (24).—Lutetian.—Kalfu-Tamaskie, Sokoto, *Rhabdocidaris*?; NEWTON (226) p. 89: *Plesiolampas*, *Linthia*, *Leiocidaris*, Baol near Dakar, *Echinolampas*; LAPPARENT (176).—Senegal, *Plagiopygus* n. sp.; LAMBERT in MEUNIER (212): *Echinolampas* n. sp.; CHAUTARD (47) pp. 145, 151.—Nummulitic of Agost, Spain, *Balanocr.*, *Pentacr.*, *Podocidaris*, radiole (fig.), *Prenaster*, *Trachyaster*, *Conoclypeus*, *Oriolampas*, *Pliolampus*, *Echinolampas*, *Micropsis*; CISNEROS (54).

Lower.—Kharga Oasis, Egypt, *Conoclypeus*; BALL (14) p. 90.—Jebel Garra, W. of Assouan, *Rhynchopygus*; BALL (15) p. 30.

(iii) MESOZOIC.

- a. **General**:—Isère, annotated catalogue of *Ech.* from Infralias to Senonian, comprising n. spp. of *Pygaulus*, *Trematopygus*, *Clitopygus*, *Hemipedina*, *Cidaris*, *Plegiocidaris*, *Rhabdocidaris*; SAVIN (286).

- b. **Cretaceous**:—Unterengadin, Crinoid limestones, *Pentacr.*; PAULCKE (243) pp. 271–274.—Near Moedling, Austria, *Nucleolites*, *Galerites*; TOULA (318) p. 321.—Tibet, *Hemiaster*, *Hemipneustes*; HAYDEN (132) pp. 164, 165.—N. America, *Crin.* 21 spp., *Ast.* 1 sp., and *Cassidulus*; JOHNSON (146).—Cerro Cazador, Patagonia, *Astropecten* n. sp.; LORIOI (195) p. 141.
1. **Upper**:—Chalk of Rochester district, Kent, locc. of Echinoderms; DIBLEY (76).—England, *Mitraster*, *Nymphastrer* n. sp., *Pentagonaster* n. spp., *Pentaceros* n. spp.; SPENCER (305).—Sénonais (Yonne) various *Micraster* and *Marsupites*; LAMBERT (169).—Bohemia, lists of *Ech.*, *Ast.*, *Crin.*; ZAHALKA (348) pp. 159, 165, 168, 169.—Couches rouges de Leysin, Switzerland, *Echinocorys*, *Micraster*, *Cardiaster*, *Pentacr.*, *Balanocr.*; ROESSINGER (278).—E. Balkans, *Entrochus insignis* n. sp., and columnals cf. *Encrinurus*, *Apicr.* and *Pentacr.* [now known to be Trias] (p. 347), *Galerites*, *Ananchytes* (p. 362), *Cidaris* (p. 364); TOULA (317) p. 392.—Gabun, W. Africa, *Echinobrissus* n. sp.; KOSSMAT (167).—(?), Telesni valley at the Tosaye bend, R. Niger, *Linthia*? collected by Lieut. Desplagnes; LAPPARENT (177).—Roca, Patagonia, *Linthia*; WILCKENS (341) p. 139.
- Danian, —Persia, locc. of *Ech.* and *Balanocr.*; MORGAN (218).—Kharga Oasis, Egypt, *Ananchytes*; BALL (14) p. 86.—Kurkur Oasis, W. of Assouan, *Ananchytes*, *Pentacr.*; BALL (15) p. 32.—(Upper), Kom Ombo plain, Nile Valley, *Echinocorys*; BEADNELL (23) p. 668.—Fox Hills beds, Lander, Wyo., *Pentagonaster* n. sp.; WELLER (334).
- Senonian, —Var, *Cidaris*; SAVIN (286) p. 307.—L'Yonne, spp. of *Gauthieria*, *Micraster*, and n. spp. of *Cidaris* and *Salenia*; VALETTE (324).—Presqu'île St Jean (Alpes maritimes) *Micraster arenatus*; MAURY (210) p. 587.—Ekaterinoslav, *Cidaris*, *Tetragramma*, *Echinoconus*, *Holaster*, *Ananchytes*; FAVRE (91).—Abu Roach, Egypt, *Echinobrissus*; BEADNELL (22) pp. 19, 27.
- Upper Senonian, —Phosphatic Chalk, Taplow, *Marsupites*, *Bourguetier.*, *Uintacr.*, *Cidaris*, *Echinocorys*, *Galerites*, *Micraster*, *Cardiaster*, *Pseudodiadema*, *Pentagonaster*, *Metopaster*, *Oreaster*; WHITE (338).—*Marsupites* zone, Westphalia, *Marsupites*, *Uintacr.*, *Bourguetier.*, *Pentacr.*, *Stellaster*, *Zeuglopleurus*, *Cassidulus*, *Pygurus*, *Cardiaster*, *Micraster*, *Catopygus*; WEGNER (333).—Pomerania, *Ananchytes*, *Cardiaster*, *Echinoconus*; DEECKE (69) pp. 15, 17.—Dakar, Senegal, *Physaster*; PERON (247).—Umzamba beds, Pondoland, *Hemiaster*, *Holaster*, *Cassidulus*; ROGERS (279) pp. 324, 326.
- Lower Senonian, —Seewerkalk, Glarner Alp, *Echinocorys*; ROTHPLETZ (281).—Santonian, Martigues, n. spp. *Goniopygus*, *Micropsis*; SAVIN (286).—Santonian, Abu Roach, Egypt, *Cyphosoma*, *Goniopygus*, *Catopygus*, *Hemiaster*, *Anthenea*, *Nardoa*; FOURTAU (98).
- Senonian to Turonian, —Wiltshire, distrib. of zones, *Holaster*, *Micraster*, *Echinocorys*, *Galerites*, *Marsupites*; JUKES-BROWNE (150) pp. 36–39.—N.E. Surrey, *Bourguetier.*, *Marsupites*, *Uintacr.*, *Pentacr.*, *Cidaris*, *Cyphosoma*, *Salenia*, *Echinocorys*, *Echinoconus*, *Discoidea*, *Micraster*, *Hemiaster*, *Holaster*; YOUNG (347).—Marlow, Bucks., *Cidaris*, *Galerites*, *Micraster*, *Echinocorys*, *Infulaster*, *Holaster*, *Bourguetier.*; TREACHER (319).—Douai, *Micraster*, *Echinocorys*, *Echinoconus*; GOSSELET (116) pp. 18, 20, 21, 42.
- Turonian, —Presqu'île St Jean (Alpes Maritimes) *Micraster leskei*; MAURY (210) p. 586.—Pomerania, *Bourguetier.* &c.; DEECKE (69) p. 19.—Poland, *Cidaris*, *Discoidea*, *Cardiaster*, *Holaster*, *Galerites*, *Caratomus*, *Ananchites*, *Micraster*; SIEMIRADZKI (301).—Oppeln, Silesia, *Micraster*, *Ananchytes*; FLEGEL (94).—Heuscheuergelbirge, Silesia, *Cardiaster*, *Micraster*; FLEGEL (95).—Persia, locc. and list

- of Ech.; MORGAN 215.—Abu Elachi, Egypt, *Cypripedium*, *Goniopygus*; PELLAT 25.—
- Celionian?—Cape Verde, *Mast. Wierstia*, *Isaridion*, *Pseudodiadema*; JUKES-BROWSE 150, p. 25.—Abu, *Papilionum*; SAYN 386, p. 24.—Sahara, *Eusaster*, *Hemaster*; DE STEFANO 73.—
- Yunnan, *Ericcia*, *Pteropoda*, *Hemaster*; CHOFFAT 51, p. 32.—
- Mindoro, *Malacothrix*, *Pseudodiadema*, *Palaena*, *Sarcocidaris*; WOLLEBAST 243.—Hawaii, *Aca. Cidaris*, *Hemaster*; BOTHWELL 251.—
- Zone of *Actinometra* *pinnata*, E. *Ericcia*, *Cidaris*; PETRASCHIK 254, p. 425.—Persia, *loc. of Ech.*; MORGAN 215.—Abu Elachi, Egypt, *Hemaster*, *Cypripedium*, and other Ech.; BLANCKELL 22, pp. 19, 21, 24, 22.
- Albania.—Near *Eustrongylus* and *Nice*, *Cidaris*, *Typocidaris*, *Peltaster*, *Diplopodia*, *Pseudodiadema*, *Diocidaris*, *Cinnia*, *Pygmaea*, *Catopygus*, *Holaster*, *Epistaster*, *Toxaster*, *Hemaster*, *Typocidaris*, *Cardiopelta*; HITZEL 149.—
- Near *Greenobis*, *Sarcocidaris*, *Cidaris*, *Rhabdocidaris*, *Diocidaris*; PAGUIER 236, p. 134.—Angola, *Salenia*, *Pygmaea*; CHOFFAT 55, p. 56.—Pomerania, E.A. *Java*, *Asterias*, *Pentaster*, *Hol. Ucinulina*; HÜCKE 143, p. 166.—Korymbos Quader, E. *Eubesia*, *Pygmaea*, *Catopygus*; PETRASCHIK 254, p. 416.—Persia, *loc. of Ech.*; MORGAN 215.
- Upper Greenland.—England, *Comptonia*, *Astropecten*; SPENCER 205.—Wiltshire, list of Ech.; DAVEY 67.—Zone of *Pecten asper*, near *Devizes*, *Holaster*, *Cardiaster*, *Catopygus*; JUKES-BROWSE (150) p. 25.
- Vracianian?, Angola, *Rhabdocidaris* pp. 46, 58, *Cidaris*, *Isaster*, *Epistaster*, *Holaster* (p. 56), *Stigmatopygus* (p. 59); CHOFFAT (50).
2. Lower.—Murcia, *Pseudocidaris*, *Heteraster*; CISNEROS (53).—Capri, *Apicor.*, *Rhabdocidaris* n. sp., *Hemicidaris* n. sp., *Orthopsis*; AIRAGHI (7).—E. Balkans, *Toxaster* p. 341, *Catopygus* p. 359, *Pseudocidaris* (p. 369); TOCLA (317, p. 393.—W. Morocco, *Toxaster*, *Pseudodiadema*; BRIVES (42).—Near Malone Mt., Texas, *Enallaster*, *Epistaster*; STANTON in CRAGIN 64, p. 31.
- Aptian.—Gard, France, *Miotoxaster*, *Diplopodia*; LAMBERT (170) p. 846: *Miotoxaster*, *Phyllobrissus*, *Hemidiadema*; PELLAT (245): (Lower), Laval St. Roman, *Actinometra ragnasensis*, *Miotoxaster collegnii*; PELLAT (244).—L'Yonne and l'Aube, *Cidaris*, *Salenia*, *Peltaster*, *Pseudodiadema*, *Toxaster*; PERON (246).—Portugal, *Pseudodiadema* n. sp., *Goniopygus*; LORIOL (195) p. 138: C. d'Espichel, *Enallaster*; CHOFFAT (51) pp. 12, 15.—Vierwaldstättersee, *Toxaster* (p. 5), *Cidaris* (p. 6); PANNEKOEK (237).—Persia, *loc. of Ech.*; MORGAN (218).
- Urgonian.—Portugal, *Toxaster* n. sp.; LORIOL (195) p. 138.—Barrémian, Gard, France, *Holotypus*, *Pygmaeus*, *Phyllobrissus*, *Holaster*, *Toxaster*, and n. sp. of *Astrolampus*; LAMBERT (170): *Holotypus*, *Pygmaeus*, *Astrolampus*, *Phyllobrissus*, *Holaster*, *Toxaster*, *Miotoxaster*; SAYN (287): Royans, *Toxaster*; SAYN (286A).—Barremian, Portugal, C. d'Espichel, *Pyrina*, *Goniopygus*, *Orthopsis*, *Rhabdocidaris*, *Pseudocidaris*, *Cidaris*, *Codiopsis*, *Circopelta*, *Pseudodiadema* (pp. 9-11), *Ericcia*, *Pseudocidaris*, *Pseudodiadema*, *Toxaster*, *Miotoxaster* (pp. 27-30); CHOFFAT (51).—Lower Urgonian, Capri, *Cidaris*, *Pseudocidaris*, *Salenia*; AIRAGHI (7).
- Hauterivian.—Gard, France, *Toxaster*; LAMBERT (170) p. 846.—C. d'Espichel, Portugal, *Pygmaeus*, *Botriopygus*, *Rhabdocidaris*, *Apicor.* (p. 7), *Holaster* (p. 8); CHOFFAT (51).
- Neocomian.—Sponge-gravels of Faringdon, Ech.; DAVEY (66) p. 31 & (67).—Basses Alpes, *Aulacocidaris* n. sp.; LORIOL (195) p. 140.—Mt. Salève, Haute Savoie, *Botriopygus*; op. cit. p. 143.—

- (Upper), Fuest, Bernese Jura, *Pyrina*; ROLLIER (280).—(Lower), Capri, *Cidaris*, *Rhabdocidaris*, *Pseudocidaris*; AIRAGHI (7).—Uitenhage Beds, Zwartkops R., Cape Colony, *Cidaris*; ROGERS (279) p. 294.—Glarner Alp, Upper Valangian, *Cidaris*, *Pygurus* (p. 70), Berriasian, *Cidaris* (p. 57); ROTHPLETZ (281).
- c. **Jurassic**.—Tibet, *Crin.*; HAYDEN (132) p. 166.—Oxfordian to Bajocian near Poitiers, *Ech.*; WELSCH (336).
1. **Upper**.—Pebble with *Collyrites* in Miocene of Langogne, Lozère; KILIAN (157).—Tatahouine, Tunis, *Monodiadema*, *Pygurus*, *Hemicidaris*, *Millericr.*; PERVINQUIÈRE (250).—Dahar Mts., S. Tunisia, *Pygurus*, *Acrosalenia*, *Monodiadema*, *Acropeltis*, *Phyllobrius*; DOUVILLÉ (84).—Hakim, Somaliland, *Cidaris* and a *Spatangid* [?]; DACQUÉ (65) p. 124.—Malone formation, Texas, *Holotypus*, *Pygurus*; CRAGIN (64).
- Portlandian** (=Tithonian).—Murcia, *Collyrites*, *Metaporhinus*; CISNEROS (53).—Glarner Alp, *Cidaris*, *Hemicidaris*; ROTHPLETZ (281) p. 55.—Stramberger Kalk, lists of *Ech.* and *Crin.* from Stramberg and Nesselsdorf, and in exotic blocks, with discussion of relations (268) pp. 216, 280, 290, 361, 364, 367, 369, 372: of Stramberg, *Ast.*, *Thiolliericr.*, *Diplocidaris*, and n. spp. of *Cyrtocr.*, *Cidaris*, and *Pseudosaccocoma* n. g. (269); Moravia, —various locs., *Thiolliericr.*, *Cidaris* (270, 271); Vlčovic, *Balanocr.* (272); Skalitz, *Metaporhinus*, *Pseudodiadema*, *Cidaris*, *Pseudosaccocoma* (273); near Kopřivnice, *Thiolliericr.* (274); REMÉZ.—(Upper), Capri, *Salenia*, *Pseudocidaris*, *Rhabdocidaris*, *Cidaris*, *Apocr.*; PARONA (242).—Préalpes maritimes, *Cidaris*, *Acrocidaris*, *Plegiocidaris*, *Acropeltis*, *Glypticus*, *Stomechinus*, *Pygurus*, *Pedina*; KILIAN (156) p. 818.
- Upper Kimmeridgian** and base of Portlandian, *ibid.* *Cidaris*, *Plegiocidaris*, *Glypticus*, *Acropeltis*, *Cardiopeltis*, *Pedina*, *Collyrites*, *Balanocr.*; KILIAN (156) pp. 806, 807.
- Kimmeridgian**.—Aare-Thal &c., Switzerland, *Cidaris*, *Rhabdocidaris*, *Collyrites*, *Balanocr.*, Wangener Schichten, *Cidaris*, *Crenularis* Schichten, *Hemicidaris*, *Stomechinus*, *Collyrites*, *Rhabdocidaris*; MUEHLBERG (221) pp. 506–508.—Somaliland, *Pseudocidaris*; DACQUÉ (65).
- Sequanian** or **Kimmeridgian** of Tatahouine, Tunis, *Acrosalenia*, *Acropeltis*, *Pygurus*, and n. spp. of *Pseudocidaris*, *Monodiadema*, *Hologlyptus*, *Phyllobrius*, *Pygurus*; LAMBERT (172).
- Sequanian**.—Préalpes maritimes, *Collyrites*, *Pentacr.*; KILIAN (156) p. 792.—[Corallian?] “calcaire coralligène,” Mt. Salève, Haute Savoie, *Echinobrius* n. sp.; LORIOI (195).—Upper Antartian, St. Antonin, Central France, *Pseudodiadema*, *Pygurus*, *Hemicidaris*, *Cidaris*, *Rhabdocidaris*, *Acrosalenia*, *Apocr.*; THÉVENIN (312) p. 87.—Akanthiuskalk, Unterengadin, *Crin.*, *Ech.*; SCHILLER (290) p. 131.
2. **Middle**.—Oxfordian. —Of Ardèche, *Eosalenia* n. g. et sp.; SAVIN (246) p. 311.—Préalpes maritimes, *Collyrites*, *Cidaris*, *Rhabdocidaris*, *Plegiocidaris*, *Balanocr.*; KILIAN (156) p. 791.—Birmensdorf Schichten. —Aarethal, Switzerland, *Cidaris*, *Eugeniacr.*; MUEHLBERG (221) pp. 506–508; Glarner Alp, *Cidaris*, *Rhabdocidaris*, *Pseudodiadema*; ROTHPLETZ (281) pp. 50, 51.—Rauracian. —Promaille St. Jean (Alpes Maritimes), *Glypticus*, *Diplocidaris*, *Cidaris*, *Rhabdocidaris*, *Diplopodia*, *Pseudodiadema*, *Acrocidaris*, *Apocr.*; MACRY (210) p. 543.—Mt. Salève, Haute Savoie, *Diplopodia*, *Stomechinus*; LORIOI (195). —Lower Rauracian of Champplitte near Gray, France, 52 spp. *Ech.*, *Collyrites*, *Dysaster*, *Pygurus*, *Echinobrius*, *Holotypus*, *Pyrina*, *Holotypus*, *Pygaster*, *Cidaris*, *Rhabdo-*

- Diplo-*, *Pseudo-*, *Hemi-*, *Acro-cidaris*, *Pseudodiadema*, *Glypticus*, *Magnosia*, *Pedina*, *Stomechinus*, 34 spp., *Crin.*, *Eugeniocr.*, *Apiocr.*, *Millericr.*, *Pentacr.*, *Extracr.*, *Antedon*, all with locc. and synn.; MAIRE (206).—Lower Oxfordian, —Bernese Jura, comparison of faunas at Graiter and Rouges-Terres, *Cidaris*, *Pseudodiadema*, *Asterias*, *Balanocr.*; AEBERHARDT (1).—La Faucille, S. Jura, *Cidaris*, *Pseudodiadema*; LEE (178).
3. Lower,—Cook inlet, Alaska, *Pentacr.*; STANTON (307) p. 396.—Franche-Comté, lists of *Ech.*, *Ast.*, *Crin.*; GIRARDOT (112) pp. 179–194, 269, 305, 352, 382, 392.
- Bathonian:—near Macon, *Ech.* and *Crin.* under zones; LISSAJOUS (183).—Hte. Saone, *Hemicidaris* n. sp.; SAVIN (286) p. 310.—Préalpes maritimes, *Rhabdocidaris*, *Gymnocidaris*, *Pseudodiadema*, *Stomechinus*, *Pedina*, *Pygurus*, *Acrosalenia*; KILIAN (156) p. 760.—Nurra, Sardinia, *Pentacr.*, *Cidaris*; DENINGER (73).
- Bajocian:—near Macon, *Ech.* and *Crin.* under zones; LISSAJOUS (183).—Préalpes maritimes, *Cidaris*, *Plegiocidaris*, *Diplopodia*, *Stomechinus*, *Pentacr.*; KILIAN (156) p. 743.—Near Bruniquel, Central France, *Cidaris*, *Stomechinus*, *Hemicidaris*; THÉVENIN (313) p. 76.—Glarner Alp, *Cidaris*, *Collyrites*; ROTHPLETZ (281) pp. 35, 38.—(Lower), *Opalinus* zone, Luxembourg, *Astropecten*, *Pentacr.*; BENECKE (29) pp. 75, 76.
- (c & d) Sinemurian (p. 815), Bajocian (pp. 832, 834), Bathonian (p. 842), Callovian (p. 844), Oxfordian (pp. 848, 849), of Poitou, *Ech.* and *Crin.*; WELSCH (335).
- d. Lias:—of Franche-Comté, lists of *Ech.* and *Crin.*; GIRARDOT (112) pp. 46, 245, 382.—near Moedling, Austria, *Disaster* (p. 272), *Pentacr.* (p. 322); TOULA (318).—Bulgaria, *Pentacr.*, *Extracr.*; BAKALOW (13).—E. Balkans, *Pentacr.*; TOULA (317) pp. 359, 394.—Lias, Steinsberger Kalk, Unterengadin, *Pentacr.*, *Apiocr.*, *Diademopsis*; SCHILLER (290) p. 126.
- Upper, or Toarcian:—(Upper), St. Antonin, Central France, *Galeropygus*; THÉVENIN (313) pp. 63, 72.
- Middle, or Pliensbachian (= Charmouthian):—Glarner Alp, *Pentacr.*; ROTHPLETZ (281) p. 29.—Italy, *Loriolella* n. g. *Ech.*; FUCINI (102).—Rocchetta, Italy, n. spp. of *Diademopsis* and *Mesodiadema*; AIRAGHI (6).
- Lower, or Sinemurian:—Antirhaeticum, Unterengadin, *Pentacr.*; PAULCKE (243) p. 269.—Palermo, *Pentacr.*, *Diademopsis*, *Asterias*; SCALIA (288).
- Infralias of Ardèche, *Plegiocidaris*; SAVIN (286) p. 312.
- Rhaetic, Pendoylan, Glamorganshire, *Acrosalenia* l, with note on Echinoderms of *Avicula contorta* zone; RICHARDSON (277) p. 406.
- e. Trias:—See also III, B, iii, b; TOULA (317).—Bulgaria, *Cidaris*, *Pentacr.*, *Encrinurus*, *Entrochus*; BAKALOW (13).
- Upper:—Pachycardientuffe, Seiseralpe, *Encrinurus*, *Cidaris*; BLASCHKE (32).—? Upper, New Zealand, —Shaw B., Mt. Potts, and Well's Creek, Nelson, *Pentacr.*; PARK (239) pp. 383, 389, 398: Wairoa gorge, Sellen's run, and Eighty-eight Valley, *Pentacr.*; PARK (240) pp. 438, 439.
- Middle:—Wengen Beds., Montenegro, *Encr.*, *Cidaris*; MARTELLI (209).—Muschelkalk, —Upper Silesia, *Dadocr.*, *Encr.*; WYSOGÓRSKI (345).—Gross Läger, Unterengadin, *Dadocr.*; SCHILLER (290) p. 118. —Lower Muschelkalk, Pfalzburg, Elsass, *Cidaris* (p. 105), *Pentacr.* (p. 111); SCHUMACHER (295).—Werfener Schichten, near Moedling, Austria, *Pentacr.*; TOULA (318) p. 286.

(iv) PALAEOZOIC.

- a. **General**:—Vacant.
- b. **Permian**:—Vacant.
- c. **Permo-Carboniferous**:—Vacant.
- d. **Upper Carboniferous**:—Coal measures—marine band above [i.e. below] the Gin Mine Coal, Nettlebank Sinking, Smallthorne, N. Staffs., *Archaeocidaris*, *Crin.*; HIND (138) p. 121 and (139) p. 235: WARD (330) pp. 294, 320, 343: STOBBS (308) pp. 502, 529, 543, 547, pl. xxxv.—Spain, *Archaeocidaris*, *Poteriocr.*, *Mespilocr.*, *Erisocr.*, *Platycr.*, *Cyathocr.*, *Euryocr.*; MALLADA (208) *passim*.—Kessler Limestone of Arkansas = Pentremital Limest.; GIRTY (113) p. 9.—Bangor Limestone near Cole City, Georgia, *Pentremites*; MCCALLIE (203).
- e. **Lower Carboniferous**:—Carbonif. Limest., Ticknall and Breedon Cloud, S. Derbyshire, list of *Crin.* and *Ech.*; STRANGWAYS (310) p. 14: near Cefn, S. Wales, *Archaeocidaris*, *Crin.*; HIND (139) p. 237.—Cork, list of *Crin.* and *Palaechinus*; LAMPLUGH (174) pp. 26, 29.—S. Oran, Algeria, *Poteriocr.* and *Actinocr.* columnals; THÉVENIN (314). Erg of Issaouan, Algerian Sahara, *Poteriocr.*, *Rhodocr.*; HAUG (130) pp. 793, 795: *Poteriocr.*; FOUREAU (96) p. 574. Chester group, Cypress Sandst., W. Kentucky, *Talurocr.*, *Pentremites* (p. 54), Ste. Genevieve Limest., W. Kentucky, *Platycr.*, *Batocr.*, *Pentremites*, *Mesoblastus* (pp. 42, 47), Kaskaskia Limest. = Birdsville and Tribune, W. Kentucky, *Agasizocr.*, *Pterotocr.*, *Pentremites* n. spp. (pp. 58, 61, 63); ULRICH (321). St. Louis Limest., W. Kentucky, *Pentremites* n. sp., *Melonites*, *Archaeocidaris*, *Dichocr.* (p. 33), Spergen Limest., W. Kentucky, *Pentremites* (p. 30); ULRICH (321). Missouri, Burlington age, *Cyathocr.* n. sp., *Eretmocr.*, *Cryptoblastus*, *Schizoblastus*, *Lophoblastus* n. sp., *Orophocr.*, *Pentremites*, *Metablastus*, *Mesoblastus*, *Codaster* n. sp.; ROWLEY (282).—Waverly age, Rocky Mts., S. W. Montana, *Cyathocr.*, *Taxocr.*, *Actinocr.*, *Platycr.*, *Rhodocr.*, *Poteriocr.* (pp. 421–423), Madison Lst., Bridger Mts., Montana, *Poteriocr.*, *Platycr.*, *Rhodocr.* (see Miller, 234 & 235 Zool. Rec. 1897) (p. 417); DOUGLASS (82).
- f. **Devonian**:—Spain, *Prudocr.*, *Entrochus*, *Cyathocr.*, *Hexacr.*, *Rhodocr.*, *Pentremitidea*, *Phaenochisma*, *Troostocr.*; MALLADA (208) p. 6 et *passim*.—Tassili and Erg of Issaouan, Sahara, *Melocr.*; HAUG (130) p. 766.—Columbus Lst., Ohio, *Nucleocr.*; PROSSER (261). Upper Devonian:—Portage beds, N. York, *Maragnicr.* n. g. et sp., *Cosmocr.*; WHITFIELD (339): *Cyathocr.*, *Scytalocr.*, *Maragnicr.*; CLARKE (58). Middle:—Moravia, *Actinocr.*, *Protocidaris*; SMYČKA (303).—Sierziawy-Schichten and Crinoiden-Kalk, Poland, *Huplocr.*; SOBOLEW (304) p. 68. Lower:—in Cornwall, England, *Sympterura* n. g. et sp.; BATHER (21).—Meadfoot beds, S. Devonsh. *Hexacr.* and other *Crin.* remains; URSHER (323).—Coblentian Dachschiefer, various locc. near Rüdesheim, *Acanthocr.*, *Cyathocr.*; LEPLA (180) p. 28: at Caub. *Acanthocr.*, *Cyathocr.*; LEPLA (181) p. 16. Helderbergian, New York, *Anomalocystia*, *Lepocr.*, *Homocr.*, *Edriocr.*, *Melocr.*, *Cordylocr.*, *Aspidocr.*, *Brachioocr.*; n. spp. of *Thysanocr.*, *Mariocr.*, *Ichthyocr.*; TALBOT (312).—Becraft limestone, Trilobite Mt., N.Y., *Edriocr.*; SHIMER (300).—Silurian? Lower Helderberg, Virginia, *Aspidocr.*; WILLIAMS (342).

- g. **Silurian**:—Spain, *Scyphocr.*; MALLADA (207) p. 294 & (208) p. 61.—Niagara Limest., Clinton co., Iowa, *Caryocr.* (p. 399), *Siphonocr.*, *Saccocr.*, *Ichthyocr.* (p. 402); UDDEN (320).—Silurian, Yass, Victoria, *Cyathocrinus*? and other Crin. columnals; SHEARSBY (296).
- h. **Ordovician**:—Spain, *Echinospaera*; MALLADA (207) p. 307.—W. of Rebouc, Pyrenees, *Echinospaera*, BRESSON (41) p. 91.—(Upper) Canigou, Pyrénées-orient., *Corylocr.*, *Caryocystis*, *Echinospaera*; DEPÉRET (74).—Jewe beds, D1, *Pentacr.*; JONKER (148) pp. 138–141.—d 2 of Řevnitz, Bohemia, *Camarocr.*; FRITSCH (100).
- Trenton of Pakenham, Ont., *Agelacr.*, *Glyptocr.*, *Pleurocystis*; AMI (11) p. 84J.—Chazy Limestone, Lake Champlain region, *Malocystis*, *Glyptocystis*, *Palaeocystis*; RAYMOND (265): n. spp. of *Malocystis*, *Lyriocr.*?, *Rhaphanocr.*?, *Carabocr.*; HUDSON (144).—Simpson formation, Arbuckle Mts., U.S.A., *Glyptocystis*, *Platycystis*, *Amygdalocystis*, *Archaeocr.* (pp. 24, 25), Viola Limest., *ibid.* *Cyst.* columnals (p. 27); TAFF (311).
- k. **Cambrian**:—Spain, *Trochocystis*, MALLADA (207) pp. 27, 66.—Coulouma, Montagne Noire, Aude, *Ecocystis*, *Trochocystis*, and n. sp. of *Stromatocystis*; MIQUEL (216).

IV. SYSTEMATIC†.

(A.)—ECHINODERMA IN GENERAL.

Chapters on “die spezifische Bestimmung” and “die Artwandlung”; PRZIBRAM (262).

Echinoderma divided into *Pelmatozoa* (Crin., *Cyst.*, *Blast.*) and *Echinozoa* (*Ast.*, *Oph.*, *Ech.*, *Hol.*); GROBBEN (124) p. 654.

(B.)—HOLOTHURIOIDEA.

Allopatides n. g. of *Synallactidae*, with genotype *A. dendroides* n. sp., 669 fm. S.W. of Andaman Is.; KOEHLER & VANEY (164) p. 49, pls. iii, xi.

Amphideima n. g. of *Deimatidae*, with genotype *A. investigatoris* n. sp., 250 fm., Andaman Is.; KOEHLER & VANEY (164) p. 59, pls. iv, xii.

Amphigymnas multipes Walsh, genotype, syn. of *Synallactes wood-masoni* (q.v.); KOEHLER & VANEY (164).

Anapta (?) *dubiosu* n. sp., 410 fm., B. of Bengal; KOEHLER & VANEY (164) p. 109, pl. xv.

Ankyroderma brevicaudatum n. sp., 185 fm., Andaman Is. (p. 99, pl. xv), *A. contortum* n. sp., 753 fm., B. of Bengal, Kistna coast (p. 100, pl. xiv), *A. intermedium* n. sp., 637–800 fm., B. of Bengal, Kistna Coast, and Stat. 199, 8° 40' N., 81° 27' 35" E. [this is in the middle of Ceylon] (p. 102, pl. xv). *A. musculus*, incl. *A. spinosum* Ludw., variations in length (p. 95), n. var. *acutum*, 410–847 fm., various locc. B. of

† A dagger prefixed to the name of a species indicates that it is fossil; prefixed to the name of the author, it denotes that the reference is to the species in a fossil state; prefixed to the name of a genus, it indicates that all species in the same paragraph are fossil, and the † is therefore not repeated before each name. The abbreviations *l. c.* and *op. cit.* refer only to the place or work quoted immediately before.

A name and reference quoted without further statement [e.g. *Caudina arenata*; CLARK (55) p. 12] indicate that the quoted author's statement refers to a question of no systematic importance. Further information can usually be gleaned from the cross-references under TITLES.

- Bengal and Arabian Sea (p. 97, pl. xiv), *n. var. undulatum*, 185 fm., Andaman Is., 480 fm. off S.W. Ceylon (p. 99, pl. xv), *A. polymorphum n. sp.*, 690-920 fm., N. Coromandel Coast (p. 103, pl. xiv); KOEHLER & VANEY (164).
- Apodogaster* Walsh, discussed, *A. alcocki*, added notes; KOEHLER & VANEY (164) p. 66, pls. v, xii.
- Aspilochirota n. fam.* see *Gephyrothuridae*.
- Bathyplores assimilis n. sp.*, 360 fm., S. of Malabar (p. 25, pls. iii, x), *B. crenulatus n. sp.*, 405 fm., Andaman Is. (p. 23, pl. x); KOEHLER & VANEY (164). *B. natans*; NORDGAARD (230) pp. 161, 241, *B. papillosus n. sp.*, 556-595 fm., W. of Ceylon (p. 28, pl. x), *B. profundus n. sp.*, 1644 fm., B. of Bengal (p. 22, pls. iv, x), *B. variabilis n. sp.*, 498-726 fm., Palk Str., N. Ceylon (p. 26, pls. v, x); KOEHLER & VANEY (164).
- Bathyzona n. g.* of *Synallactidae*, with genotype *B. incerta n. sp.*, 1140 fm., N. of Laccadives; KOEHLER & VANEY (164) p. 53, pls. i, xi.
- Benthodytes glutinosa*, added notes; KOEHLER & VANEY (164) p. 72, pl. xii. *B. unthina*; RICHARD (276) p. 3. *B. sanguinolenta* (p. 72), *B. superbus n. sp.*, 1506 fm., N. of Arabian Sea (p. 74, pls. vii, xii); KOEHLER & VANEY (164).
- Benthophyces n. g.* of *Deimatidae* (p. 64), genotype *B. fragilis n. sp.*, 740 fm., N. of Malabar Coast (p. 65, pls. viii, xii); KOEHLER & VANEY (164).
- Benthothuria* discussed, rediagnosed (p. 40), *B. cristatus* [sic] *n. sp.*, 869-913 fm., N.W. of Nicobar Is. (p. 42, pl. i), *B. distortus* [sic] *n. sp.*, 912-931 fm., N. Malabar Coast (p. 43, pl. iii), *B. funiformis* (p. 41); KOEHLER & VANEY (164).
- Caudina arenata*; CLARK (55); p. 12: HERTWIG (136). *C. coriacea n. var.*, *brevicauda*, New Zealand (pp. 66, 121, fig.), *C. pigmentosa* redescri. and now first figd., wine-red concentric sclerites (p. 69, pl. iv and figg.), *C. pulchella n. sp.*, New Zealand (p. 117, pl. v), *C. rugosa*, redescri. and now first figd. (p. 66, pl. iv); PERRIER (249).
- Chiridota chiaji* is either *Labidoplax digitata* or *L. thomsoni*; ØSTERGREN (235) p. clxii. *C. contorta* distinguished from *C. studei*; PERRIER (249) p. 77. *C. laevis*; CLARK (55) p. 13. *C. marenzelleri*, redescri. and now first figd.; PERRIER (249) p. 79, pl. iv. *C. pellucida*; SCHMITT (292) p. 248. *C. pinnata* is Mediterranean form of *Synapta inhaerens*; ØSTERGREN (235) p. clxii. *C. pisanii*; PERRIER (249) p. 79.
- Chondrocloea striata n. var. incurvata*, Somali coast; VANEY (326) p. 190.
- Colochirus*, discussed and restricted (p. 107), no Antarctic spp. (p. 111); PERRIER (249). *C. brevidentis*, vide sub *Cucumaria*. *C. dolioleum?* juv. (p. 189), *C. gravierrii n. sp.*, Somali coast, 20 m. (p. 188); VANEY (326). *C. luciae* distinguished from *Cucumaria montagui*; NORMAN (232) p. 359.
- Cucumaria*, discussed; PERRIER (249) p. 108. *C. sp.*; GRAVE (118). *C. alba* (p. 85) and *C. brevidentis* (Hutton sub *Thyone*) (p. 110), added notes; PERRIER (249). *C. calcigera*; CLARK (55) p. 9. *C. elongata*, descr., with young, distinguished from "*C. pentactes* Linn." Bell; KEMP (152) p. 177, pl. xxxv. *C. filholi*, redescri. and distinguished from *C. alba*; PERRIER (249) p. 88, pl. v. *C. frondosa*; CLARK (55) p. 9: HØRNING (142) pp. 185, 189: NORDGAARD (230) p. 161: SCHMIDT (291) p. 18. *C. hispida*; KEMP (152) p. 185: NORDGAARD (230) pp. 161, 241. *C. huttoni*, added notes; PERRIER (249) p. 93. *C. hyndmani*; KEMP (152) p. 185, 205: incl. spicules figd. as *C. planci* by Bell; NORMAN (232) p. 356. *C. kerguelensis* (p. 29), *C. laevigata*, added notes, distrib. (p. 22), *C. leonina*, distrib. (p. 24), disposition of podia, sclerites, relation to *C. koellikeri* (p. 25, pl. i); PERRIER (249). *C. minuta*; CLARK (55) p. 9. *C. montagui* Fleming was based on

- Montagu's *C. pentactes* var. and therefore incl. *C. normani* Pace, spicules figd., young incl. *Holothuria decollata* Leach MS. and "*C. saricola*" Pace 1904; NORMAN (232). *C. ocnoides*, descriptions by Dendy & Reiffen harmonised, not related to *Molpadidae* (p. 96, pls. i, v), *C. parva*, podia and sclerites (p. 29, pls. ii, iii); PERRIER (249). *C. planici*; KEMP (152) p. 178; NOBRE (229) p. 132: spicules, correction of Bell, B. M. Cat. Brit. Echin.; NORMAN (232) p. 356. *C. pulcherrima*; CLARK (55) p. 9. *C. tabulifera*, redescri., now first figd.; PERRIER (249) p. 17, pls. i, iii. *C. transitoria* n. sp., Somali coast, 20 m.; VANEY (326) p. 187.
- Deima blakei*, variations; KOEHLER & VANEY (164) p. 55, pl. xi.
- Deimatidae* n. gg., see *Amphideima*, *Benthophyces*.
- Dendrothuria* n. g. of *Synallactidae* (p. 44) perh. comprises *Pelopatides megalopharynx*, genotype *D. similis* n. sp., 1000 fm. E. of Laccadives (p. 45, pls. xi, xii); KOEHLER & VANEY (164).
- Echinocucumis typica*: SCHMIDT (291) p. 22.
- Elpidia willemoesi* is *Peniagone*; KOEHLER & VANEY (164) p. 68.
- Elpidiidae* n. g., see *Euriplastes*.
- Euphronides bifurcata* n. sp., 1803 fm. S. of B. of Bengal; KOEHLER & VANEY (164) p. 75, pls. viii, xii.
- Eupyrgus pacificus* n. sp., 60-65 m., Korea (p. cxcvi, fig.), *E. scaber*, added notes (p. cxcvii); ØSTERGREN (236).
- Euriplastes* n. g. of *Elpidiidae* with genotype *Peniagone ecalcareae* Sluiter (p. 70), *E. obscura* n. sp., 1803 fm., S. of B. of Bengal; KOEHLER & VANEY (164) p. 71, pl. iv.
- Filithuria* n. g., incertae fam. (p. 80) with genotype *F. elegans* n. sp., 405 fm. S.W. of Andaman Is. (p. 81, pls. vi, xii); KOEHLER & VANEY (164).
- Gephyrothuria* n. g. (p. 78) with genotype *G. alcocki* n. sp., 1912 fm. S. of Ceylon (p. 79, pl. v); KOEHLER & VANEY (164).
- Gephyrothuridae* n. fam. of *Aspidochirota* for preceding; KOEHLER & VANEY (164) p. 79.
- Holothuria arenicola* (p. 50), *H. argus* (p. 45, pl. ix); KONINGSBERGER (166). *H. aspera*; KEMP (152), p. 186. *H. atra*; KONINGSBERGER (166) p. 47, pl. viii: redefined on statistical basis; EDWARDS (88). *H. coluber* (p. 51, pl. vii), *H. edulis* (p. 49); KONINGSBERGER (166). *H. flava* is anterior end of a Synaptid, ? *S. inhaerens*; ØSTERGREN (235) p. clxii. *H. floridana*, incl. *H. mexicana* Ludw., redefined on statistical basis; EDWARDS (88). *H. fusco-punctata*; VANEY (326) p. 190. *H. graeffii*; KONINGSBERGER (166) p. 47. *H. impatiens*; op. cit. p. 51, pl. viii: VANEY (326) p. 190. *H. inhaerens*; ØSTERGREN (235) p. clxii. *H. intestinalis*; KEMP (152) p. 186. *H. marenzelleri* (p. 46), *H. marmorata* (p. 44); KONINGSBERGER (166). *H. mexicana*, vide *H. floridana*. *H. nigra*; KEMP (152) p. 178. *H. pardalis*; PERRIER (249) p. 15; VANEY (326) p. 189. *H. patagonica*, vide sub *Stichopus*. *H. pyris*; KONINGSBERGER (166) p. 48. *H. roulei* Koehl. is *Mesothuria*; KOEHLER & VANEY (164) p. 4. *H. scabra* (p. 52, pl. viii), *H. aquamifera* (p. 53); KONINGSBERGER (166). *H. tremula*; KEMP (152) p. 186. *H. vagabunda* (p. 50, pl. viii), *H. citiensis* (p. 45); KONINGSBERGER (166).
- Incertae sedis, n. g. see *Filithuria*.
- Lapidothrix buski*; NORDGAARD (230) p. 161: redescri.; ØSTERGREN (235) p. clvi. *L. media* n. sp., 45 m., off Bergen; op. cit. p. clviii, fig.
- Laetmogone violacea*; KOEHLER & VANEY (164) p. 64: colour; KEMP (152) pp. 186, 183.
- Ludwigia* rejected, vide *Cucumaria ocnoides*; PERRIER (249) p. 105.
- Mesothuria abbreviata* n. sp., 406 fm., Laccadive Is. (p. 11, pl. xii), *M. incerta* n. sp., 360 fm., Laccadive Is. (p. 11, pls. i, ix); KOEHLER &

- VANEY (164). *M. intestinalis*; NORDGAARD (230) pp. 161, 241; RETZIUS (275) p. 83, pl. xii. *M. multipes* (p. 10), *M. squamosa* n. sp., 446 fm., S. Coromandel Coast (p. 13, pls. vi, ix); KOEHLER & VANEY (164).
- Muelleria echinites*; KONINGSBERGER (166) p. 38. *M. lecanora*; op. cit. p. 37, pl. ix; VANEY (326) p. 190. *M. maculata* (p. 36), *M. mauritiana* (p. 40), *M. miliaris* (p. 39); KONINGSBERGER (166).
- Myriotrochinae*, characters of subfam.; ØSTERGREN (235) p. clxi.
- Myriotrochus*, differences from *Trochoderma*; ØSTERGREN (235) p. clx. *M. minutus* n. sp., 60-65 m., Korea; ØSTERGREN (236) p. cxciv, fig. *M. rinki*; NORDGAARD (230) pp. 161, 241. *M. theeli* n. sp., 2000 m., N.W. of Jan Mayen; ØSTERGREN (235) p. clix. *M. vitreus*; NORDGAARD (230) pp. 161, 241.
- Oneirophanta conservata* n. sp., 719 fm., N.E. of Maldives; KOEHLER & VANEY (164) p. 57, pls. vi, xi.
- Ophnurgus*, diagnosis modified (p. 63), *O. glaber* (Walsh, as var. of *O. asper*) (p. 60, pls. viii, xii), *O. invalidus* n. sp., 300 fm., Palk Strait, N. of Ceylon, allied to *Scotodeima* (p. 62, pl. xii); KOEHLER & VANEY (164).
- Pannychia moseleyi*; HEDLEY (133).
- Paroriza* comprises *Stichopus pallens*, diagnosis modified; KOEHLER & VANEY (164) p. 4.
- Pelopotides* discussed (p. 29), *P. fusiformis* Sluiter, is *Benthothuria* (p. 41), *P. gelatinosus* (Walsh sub *Benthothytes*) redescri. (p. 30, pls. v, x), *P. insignis* n. sp., 678 fm., N. Coromandel Coast (p. 39, pls. ii, xi), *P. mammillatus* n. sp., 1506 fm., N. Arabian Sea (p. 39, pl. i), *P. megalocephyrus*, perhaps is *Dendrothuria* (pp. 45, 47), *P. modestus* n. sp., 498 fm., Andaman Is., 696 fm., N. Malabar Coast (p. 37, pls. iii, xi), *P. mollis* n. sp., 265-405 fm., Andaman Is. (p. 34), *P. ovalis* (Walsh sub *Benthothytes*) redescri. (p. 35, pls. iii, xi), *P. verrucosus* n. sp., 498 fm., Andaman Is., 695 fm., S.E. of Ceylon (p. 33, pl. x); KOEHLER & VANEY (164).
- Peniagone ecalcareae*, vide *Euriplastes*. *P. expansa* n. sp., 1748 fm. S. of B. of Bengal (p. 68, pls. iv, xii), *P. (?) obscura* n. sp., 1803 fm. S. of B. of Bengal (p. 69, pl. xii), *P. stabilis* n. sp., 1803 fm. S. of B. of Bengal (p. 67, pls. iii, v, xii); KOEHLER & VANEY (164).
- Pentacta frondosa*; SCHMITT (292) p. 248.
- Perizona* n. g. of *Synallactidae*, with genotype *P. magna* n. sp., 740 fm., Laccadives; KOEHLER & VANEY (164) p. 51, pls. i, v, xi.
- Phyllophorus*, probably will merge in *Pseudocucumis*; KOEHLER & VANEY (163). *P. anatinus* (R. Perr. sub *Thyonidium*) redescri.; PERRIER (249) p. 112, pl. v. *P. drummondi* at Plymouth; NORMAN (232) p. 355. *P. ehrenbergi*; VANEY (326) p. 189. *P. pellucidus*; NORDGAARD (230) p. 161. *P. urna*; POLARA (258); RUSSO (283).
- Protankyra conferta* n. sp., 805 fm., Gulf of Manaar, 678 fm., N. Coromandel Coast (p. 105, pl. xv), *P. denticulata* n. sp., 410 fm., N. Coromandel Coast (p. 105, pl. xv), *P. errata* n. sp., 130-150 fm., Andaman Is., 480 fm., B. of Bengal = "*Ankyroderma marenzelleri* Theel" Walsh (p. 106, pl. xv), *P. inflexa* n. sp., 410 fm., B. of Bengal (p. 109, pl. xv), *P. timida* n. sp., 561-650 fm., Andaman Is. (p. 108, pl. xv), *P. triatis* n. sp., 1310 fm., N. of B. of Bengal (p. 107, pl. xv); KOEHLER & VANEY (164).
- Pseudocucumis cuenoti* n. sp., 20-50 m. off Arcachon, allied to *Phyllophorus*; KOEHLER & VANEY (163).
- Pseudopsolus macquariensis*, added notes; PERRIER (249) p. 111.
- Pseudostichopus occultatus* n. var. *plicatus*, 1644 fm., Andaman Is.; KOEHLER & VANEY (164) p. 9, pls. iii, ix.
- Pseudothuria* n. g. of *Synallactidae* (p. 47), with genotype *P. duplex* n. sp., 902 fm., N. of Laccadives (p. 48, pl. iv); KOEHLER & VANEY (164).

- Psolidium*, diagnosis modified (pp. 46 & 108), key to spp. (p. 55), *P. convergens*, sole, podia, sclerites, passage to *Cucumaria* (p. 38, pl. ii and figg.), *P. dorsipes*, added notes, rediagnosed, p. 48, pl. ii and figg.; PERRIER (249). *P. (?) rugosum* n. sp., 102 fm., off S. Malabar (p. 82, pls. vi, xiii), *P. (?) translucidum* n. sp., 457-589 fm., Gulf of Manaar (p. 83, pls. vi, xiii); KOEHLER & VANEY (164).
- Psolus*, extension of diagnosis; KOEHLER & VANEY (164) p. 86. *P. antarcticus*, added notes, young stages; PERRIER (249) p. 35. *P. californicus* n. sp., Monterey Bay, Cal., 120 m.; FISHER (93). *P. fabricii*; CLARK (55) p. 11: immature; KEMP (152) p. 185: (cf.); †NORDMANN (231). *P. levis* n. sp., 102 fm. off S. Malabar (p. 86, pls. vi, xiii), *P. membranaceus* n. sp., 102 fm. off S. Malabar (p. 84, pls. vi, xiii); KOEHLER & VANEY (164). *P. phantapus*; CLARK (55) p. 11: HØRRING (142) p. 189: NORDGAARD (230) p. 161. *P. squamatus*; CLARK (55) p. 12: SCHMITT (292) p. 248: n. var. *segregatus*, off C. Horn; PERRIER (249) p. 59.
- Psychropotes minutus* n. sp., 1140 fm., Laccadives; KOEHLER & VANEY (164) p. 76, pls. viii, xii.
- Rhabdomolgus ruber*, redescr., is a low Synaptid; LUDWIG (196).
- Stichopus ananas* (p. 41, pl. vi), *S. chloronotus* (p. 42); KONINGSBERGER (166). *S. fuscus* (p. 16), *S. mollis*, added notes (p. 83); PERRIER (249). *S. pullens* Koehl. is *Paroriza*; KOEHLER & VANEY (164) p. 4. *S. (?) Holothuria patagonicus*, Sta. Cruz, now first figd. (p. 11, pl. i), *S. torvus* (p. 15); PERRIER (249). *S. tremulus*; NORDGAARD (230) pp. 161, 241. *S. variegatus* (p. 42, pls. vi, vii), *S. vastus* (p. 43); KONINGSBERGER (166).
- Synallactes (?) dubius* n. sp., 480 fm., G. of Manaar (p. 19, pl. ix), *S. horridus* n. sp., 1746 fm., B. of Bengal (p. 16, pl. xii); KOEHLER & VANEY (164). *S. moseleyi* (Theel sub *Stichopus*), redescr.; PERRIER (249) p. 6, fig. *S. (?) pellucidus* n. sp., 210 fm., S. Coromandel Coast (p. 21, pls. iv, ix), *S. rigidus* n. sp., 1924 fm., Andaman Is. (p. 17, pls. v, ix), *S. wood-masoni* (Walsh) incl. *Amphigymnus multiplis* Walsh and *S. reticulatus* Sluiter (p. 14, pl. ix); KOEHLER & VANEY (164).
- Synallactidae*, n. gg., see *Dendrothuria*, *Pseudothuria*, *Allopatides*, *Perizonia*, *Bathyzona*.
- Synapta*, modifications of diagnosis; ÖSTERGREN (235) p. clv. *S. sp.*; BOCHENEK (33): SAFFORD (284) p. 89. *S. acanthia*, straight gut, see II, D, vii (p. cxlv), *S. bergensis* n. sp., 5-50 m. W. Coast of Norway & Sweden, & Faeroes, anatomy (p. cxxxiii, fig.), *S. bifaria* (p. clxiii), *S. decaria* n. sp., 40-70 m. W. Coast Norway & Sweden (p. cxlvi, fig.); ÖSTERGREN (235), *S. digitata* (p. 177), n. var. *profundicola*, 112 fm., 50 miles W.N.W. of Slynne Hd., Galway (p. 184); KEMP (152). *S. duvernaesi* (p. clxii), *S. gullienii*, distinguished from *S. inhaerens* and *S. bergensis* (p. clxii), *S. girardii* (p. clxii), *S. henslowiana* (p. clxiii), *S. hispida*, perhaps a *Protankyra* (p. clxiii); ÖSTERGREN (235). *S. inhaerens*; CLARK (55) p. 13: KEMP (152) pp. 177, 184: autotomy (p. cxxxv), redescr. from type-loc., S. Norway, differences from Mediterranean race and from *S. girardii* (p. cxlix, fig.); ÖSTERGREN (235). *S. macrankyra* compared with *S. bergensis*, and maintained; op. cit. pp. cxlv, cliv. *S. pourtalesi*, probably a *Chondrocloea*; op. cit. p. cliv. *S. roseola*; CLARK (55) p. 13. *S. sarniensis*, synonym of *S. gullienii* (p. clxii), *S. tenera*, syn. of *S. buski* (p. clxiii); ÖSTERGREN (235).
- Synaptidae*, modification of diagnosis, no ciliated organs; ÖSTERGREN (235) p. clvii.
- Thyone briareus*; CLARK (55) p. 10: GARREY (108). *T. elongata*; CLARK (55) p. 10. *T. fusus*; KEMP (152) pp. 178, 205. *T. lechleri*, sclerites; PERRIER (249) p. 35. *T. raphanus*; KEMP (152) p. 185. *T. sacellus*; VANEY (336) p. 189. *T. scabra*; CLARK (55) p. 10. *T. spectabilis*,

- calcareous ring and other notes; PERRIER (249) p. 32, pl. iii and figg.
T. unisemita; CLARK (55) p. 10.
Thyonidium anatinum, vide sub *Phyllophorus*. *T. pellucidum* and *T. productum*; CLARK (55) p. 11.
Trochoderma, differences from *Myriotrochus*; ØSTERGREN (235) p. clx.
Trochodota dunedinensis, added notes (p. 123), *T. purpurea*, added notes (p. 76); PERRIER (249).
Trochostoma albicans, added notes (p. 89, pl. xiii), *T. andamanense*, added notes (p. 90, pl. xiii); KOEHLER & VANEY (164). *T. boreale*; SCHMIDT (291) p. 20. *T. concolor* n. sp., 475 fm., B. of Bengal (p. 91, pls. v, xiii), n. var., *caudatum*, 637–800 fm., Stat. 199, 8° 40' N., 81° 27' 35" E. [this is in the middle of Ceylon] (p. 92, pl. xiii), *T. ealcareum* n. sp., 300 fm., S. Coromandel Coast (p. 94, pl. xiii), *T. elongatum* n. sp., 922 fm., N. of Andaman Is. (p. 92, pls. i, xiv), *T. granulatum* (p. 89); KOEHLER & VANEY (164). *T. ooliticum*; CLARK (55) p. 12. *T. pauperum* n. sp., 446 fm., S. Coromandel Coast; KOEHLER & VANEY (164) p. 93, pl. xiii. *T. turgidum*; CLARK (55) p. 12. *T. violaceum*; PERRIER (249) p. 65.
 †*Ucinulina polymorpha*; HUCKE (143) p. 167, pl. xxiii.
Ypsilothuria bitentaculata (Ludwig 1894), incl. *Y. attenuata* E. Perrier "1891" [i.e. 1886, in either case has priority and validity]; KOEHLER & VANEY (164) p. 87.

(C).—ECHINOIDEA.

- †*Acrocidaris*, diagnosis; SAVIN (286) p. 226. *A. formosa*; MAURY (210) p. 583. *A. minor*; SAVIN (286) p. 227, pl. iv. *A. nobilis*; KILIAN (156) p. 818 : MAIRE (206) p. 229 : SAVIN (286) p. 226.
 †*Acropeltis*, diagnosis; SAVIN (286) p. 199. *A. aequituberculata*; DOUVILLÉ (84) : KILIAN (156) pp. 807, 818 : LAMBERT (172) p. 574 : SAVIN (286) p. 200.
 †*Acrosalenia*, diagnosis; SAVIN (286) p. 224. *A. sp.*; THÉVENIN (313) p. 76. *A. mesleii*; DOUVILLÉ (84) : Gauthier's figure criticised; LAMBERT (172) p. 570. *A. patella*; SAVIN (286) p. 225. *A. cf. pium*; THÉVENIN (313) p. 87. *A. spinosa*; LISSAJOUS (183) p. 697.
 †*Amblypygus dilatatus*; DONCIEUX (81) p. 107 : n. var. *costulatus*, Mid. Eocene, Pyramids of Ghizeh; FOURTAU (98) pp. 133, pl. i.
Amphidetus cordatus; COLGAN (61) p. 212. *A. ovatus*; HØRRING (142) p. 189.
 †*Amphiope neuparthi* n. sp., Miocene, Bom Jesus, Loanda; LORIOL (195) p. 133, pl. x : CHOFFAT (50) p. 43.
Amphipneustes is related to *Abatus*: *A. koehleri* n. sp., off S. Georgia, Antarctic; MORTENSEN (220) p. 243, no fig.
 †*Ananchytes*, vide *Echinocorys*.
 †*Anizaster gibberulus*; BEADNELL (24) p. 52 : variations in fasciole; LAMBERT (171) p. 157 footnote.
Arucosoma fenestratum, distrib.; DORDERLEIN (79) p. 377.
Arbacia dufrenoi; PORTER (260) p. 131. †*A. monilis*; COUFFON (63) pp. 165, 214. *A. nigra*; PORTER (260) p. 131. *A. punctulata*; CLARK (55) p. 8 : GARREY (108).
Arbacia, discussed and maintained: *A. pullaryi*; CHECCHIA (49). †*A. tenera*; AIRAGHI (5) p. 47.
 †*Archaeocidaris*:—*A. sp.*; HIND (138) p. 121 : WARD (330) pp. 294, 320, 343 : cf. *benburbensis* et *vetusta*; BATHER in STOBBS (308) and pl. A. cf. *munsterianus* (p. 316), *A. nerei* (p. 196), *A. siri* (pp. 117, 182, 187); MALLADA (208). *A. urei*; HIND (139) pp. 235, 237. *A. wortheni*; ULRICH (321) p. 33.

- Asteriomidae* Pomel should be used by any who care to accept the group called *Plesiospatangidae* by Duncan: FOURTAU (97) p. 612.
- Athenosoma hystrix*; KEMP (152) p. 196: vide etiam sub *Calveria*.
- †*Astroechinus pentagonus* nom. nud.; JAEKEL 145.
- †*Astrolampus*:—*A. sp.*; SATS 267: p. 622: *A. romani* n. sp., Barremian, Seynes Gard., colln. Roman & Lambert; LAMBERT (170) p. 841, figg.
- †*Aulacocidaris michaeli* n. sp., Neocomian, La Palud de Moustier, Basses Alpes; LORIOU (195) p. 140, pl. x.
- †*Baueria rousseli*; DONCIEUX (81) p. 102: MIQUEL (215) p. 24.
- †*Botriopygus*:—*B. morloti*; LORIOU (195) p. 143. *B. aucula*, vide sub *Pygorkynchus*. *B. sarini*; CHOFFAT 51) pp. 7, 35. *B. suevici* and *B. testudo*, vide sub *Pygorkynchus*. *B. trapeti*, probably *Phyllobrissus*; LAMBERT (172) p. 575. *B. valdensis*, vide sub *Pygorkynchus*.
- Bregnella* Gregory 1892 [=1891], syn. of *Pliolampus* Pomel 1898; AIRAGHI (5) p. 50: syn. of *Echinanthus*; LAMBERT (171) p. 144.
- Briisidae*, n. g. vide *Pseudobrissus*.
- †*Briisoides* Klein, Lambert's resuscitation of this rejected in favour of *Euspatangus* (q. v.); LORIOU (195) p. 130: ditto (p. 603), *B. cranium* Klein, unrecognisable (p. 604); FOURTAU (97). *B. mejerei* n. sp., Lutetian, Minerve, Hérault; LAMBERT (171) p. 163, pl. v: DONCIEUX (81) p. 104: MIQUEL (215) p. 20. *B. oppenheimeri* n. sp., Burdigalian, Gattières, Alpes-Maritimes; LAMBERT (173) p. 881, pl. lix. *B. sarini*; DONCIEUX (81) p. 104: MIQUEL (215) p. 20 & (?) p. 25.
- Briisopsis lyrifera*; KEMP (152) p. 200: RETZIUS (275) p. 82, pl. xii: SCHMIDT (291) p. 21: distrib.; DOEDERLEIN (79) p. 384. †*B. sismondæ*, holotype descr.; AIRAGHI (6) p. 3, pl. i.
- †*Briissus*:—*B. carinatus*; MAWSON (211) pp. 414, 451, 479. *B. corsicus* Cott., vide *Pseudobrissus*. *B. oblongus*; AIRAGHI (8) p. 217.
- Calveria hystrix*; SCHMIDT (291) p. 23: distrib.; DOEDERLEIN (79) p. 377: vide etiam sub *Athenosoma*.
- †*Capoulina loculicida* Seguenza 1879, no foraminifer but an ophicephalous pedicellaria; NEVIANI (224).
- †*Caratomus*, diagnosis, *C. faba*; SAVIN (286) p. 153.
- †*Cardiaster*:—*C. sp.*; WHITE (338) p. 476. *C. ananchytis*; DEKKE (69) p. 17: FLEGEL (95). *C. fossarius*; JUKES-BROWNE (150) p. 25. *C. gillieronii*; ROESSINGER (278) p. 437. *C. jugatus*; WEGNER (333) pp. 128, 133, 139, 140, 150. *C. subtrigonatus*?; ROESSINGER (278) p. 437.
- †*Cardiopelta*, diagnosis; SAVIN (286) p. 143. *C. (Spatangus) carinata*; KILIAN (156) p. 807. *C. hemisphaerica* (A. Gras, sub *Dyoaster*) (p. 146), *C. jaccardi* and *C. malbosi* (p. 144); SAVIN (286). *C. moussoni*; HITZEL (140). *C. ovulum*; SAVIN (286) p. 145.
- †*Cassidulus*:—*C. fibularoides*, vide sub *Porpitella*. *C. florealis*, loco. of type and figd. specimens; JOHNSON (146). *C. hayesianus*, vide sub *Porpitella*. *C. lapis-cancræ*; WEGNER (333) pp. 139, 149. *C. ovalis*; DONCIEUX (81) p. 102.
- †*Catopygus*, diagnosis; SAVIN (286) p. 162. *C. albensis*; PETRASCHECK (254) p. 416. *C. cf. carinatus*; TOULA (317) p. 359. *C. columbarius*; JUKES-BROWNE (150) p. 25. *C. cylindricus*; HITZEL (140): SAVIN (286) p. 162. *C. gibbus*; FOURTAU (98) p. 128. *C. obovatus* vide *Pygorkynchus*.
- Cidaridae* n. gg. vide *Lamproechinus*, *Orechinus*, *Pygmaecidaris*.
- Cidaris* (vide etiam s. gg. *Doro*-, *Para*-, *Plegio*-, *Podo*-, *Poly*-, *Poro*-, *Rhabdo*-, *Stereo-cidaris*) diagnosis; SAVIN (286) p. 239.
- †*Cidaris* sp.; MARTELLI (209) pp. 327, 333. *C. sp.* nondescr., radiolæ, Senonian of Var. (p. 307, pl. ii), *C. sp.* nondescr. 1, Hauterivian, Isère, test (p. 247, pl. iii), *C. sp.* nondescr. 2, Hauterivian, Isère, radiolæ

- SAVIN (286) p. 255, pl. ii. *C. subcrownata*; BLASCHKE (32) p. 168. *C. subvesiculosa*; SAVIN (286) p. 256. *C. subularis*; DONCIEUX (81) p. 99: MIQUEL (215) pp. 19, 24: comprises plates referred by Cotteau to *C. pomeli*; LAMBERT (171) p. 133. *C. cf. subularis*; MURGOCI (223). *C. suevica*; MAIRE (206) p. 225. *C. vafellus*; CHOFFAT (50) p. 61. *C. vesiculosa*; PETRASCHECK (254) p. 425: ROTHPLETZ (281) p. 80. *C. zachokkei*; op. cit. p. 35: THÉVENIN (313) p. 76.
- †*Circopeltis*.—*C. baicherei*; DONCIEUX (81) p. 101. *C. cannati* n. sp., Lower Lutetian, Agel, Hérault; LAMBERT (171) p. 135, pl. v: DONCIEUX (81) p. 101: MIQUEL (215) p. 26. *C. neocomiensis*; CHOFFAT (51) p. 10.
- †*Clitopygus*, diagnosis & *C. grasi*; SAVIN (286) p. 158. *C. gerreyi* n. sp., Valanginian, Mallevall, Isère; LAMBERT & SAVIN (286) p. 159, pl. i.
- †*Clypeaster* Lam. 1801, genotype *Echinus rosaceus* Linn. as first limited by Lamarck and not as interpreted by Loven 1887, precedes *Clypeaster* Lam. 1801; LAMBERT (171) p. 142. *C. alticostatus*; AIRAGHI (8) p. 211. *C. altus* var. *portentosus* (q.v.); BATHER (20). *C. biarrizensis*; DOUVILLÉ (83) pp. 17, 27. *C. crassicostatus*; AIRAGHI (5) p. 48: GAÁL (103) pp. 344, 362: incl. *C. rhabdopetalus* Pomel; AIRAGHI (8) p. 210. *C. ellipticus* (p. 213), *C. folium* (p. 214), *C. intermedius* (p. 212); AIRAGHI (8). *C. laganoides*; AIRAGHI (5) p. 49, pl. *C. latirostris* (p. 212), *C. loriatoti* (p. 214); AIRAGHI (5). *C. portentosus*; BATE (18) p. 324: BELLAMY (28) p. 27: v. et. *altus*. *C. rhabdopetalus*, vide *C. crassicostatus*. *C. sardininiensis*; AIRAGHI (8) p. 213. *C. scutiformis*; MAWSON (211) pp. 414, 479. *C. subfolium* (p. 214), *C. sublaganoides* n. sp., Miocene, Carcare, Piedmont (p. 212); AIRAGHI (8).
- †*Clypeopygus*, diagnosis (p. 165), *C. michelini* & *C. subquadratus* (p. 166); SAVIN (286).
- †*Clypeus*.—*C. altus*; LISSAJOUS (183) p. 695: incl. *C. osterwaldi* Desor; WELSCH (326) p. 947.
- †*Codechinus*, diagnosis (p. 197), *C. rotundus* (p. 198); SAVIN (286).
- †*Codiopsis*, diagnosis; SAVIN (286) p. 192. *C. lorini*; CHOFFAT (51) p. 9: SAVIN (286) p. 193.
- †*Collyrites*, diagnosis; SAVIN (286) p. 141. *C. analis*; LISSAJOUS (183) p. 697. *C. (Spatangus) bicordata*; KILIAN (156) p. 807: MAIRE (206) p. 218: SAVIN (286) p. 142. *C. cupistrata*; l. c.: KILIAN (156) p. 792. *C. carinata*, does not incl. specimens referred here by Quenstedt, which are *Cardiopelta*; KILIAN (157). *C. (Dysaster) lorgi*; KILIAN (156) p. 807: SAVIN (286) p. 143. *C. ringens*; LISSAJOUS (183) pp. 694, 695: ROTHPLETZ (281) p. 38. *C. verneuili*; CISNEROS (53) p. 299.
- †*Conoclypeus*.—*C. unachoreta*; REDLICH (266) p. 343. *C. caudatus* n. sp., Middle Eocene of Grola and Novale, Italy; AIRAGHI (6) p. 5, pl. I. *C. conoidens*; CISNEROS (54) p. 529: DONCIEUX (81) p. 110: REDLICH (266) p. 343. *C. cf. conoidens*; SCHUBERT (294) p. 280. *C. delanouei*; BALL (14) p. 90. *C. marginatus*; DONCIEUX (81) p. 111: MIQUEL (215) p. 20. *C. plagiosomus*; GAÁL (103) pp. 344, 362: vide etiam sub *Conolampas*. *C. vilanorae*; CISNEROS (54) p. 529.
- †*Conolampas plagiosomus*; AIRAGHI (5) p. 52: vide etiam sub *Conoclypeus*.
- †*Conulus* Leske ex Klein, incl. *Echinites* Leske non Geuner, *Galerites* Lam., and *Echinoconus* d'Orb. ex Breyn. (qq.v.); BATHER (19) p. 146: diagnosis; SAVIN (286) p. 175. *C. castaneus*; l. c.: HITZEL (140). *C. mixtus*; SAVIN (286) p. 177: HITZEL (140): probably syn. of *C. castaneus*; LAMBERT in Review. *C. nuculus* [err. pro *nucula*]; HITZEL (140): SAVIN (286) p. 177.
- †*Coptosoma*.—*C. armatum* n. sp., Eocene, La Antigua Ciudad de Jaspas,

- Catalonia; LORIOL (195) p. 120, p. viii. *C. granulare*; DUNCIEUX (81) p. 100. *C. pellati*; DOUVILLÉ (83) p. 22. *C. rousseli*; DUNCIEUX (81) p. 100. "*C. thevestense* Peron & Gauthier" Gregory (see Zool. Rec. 1898) is *Cyphosoma abbatei*; FOURTAU (98) p. 122.
- +*Corthya* Pomel, merged in *Cardiopelta*; SAVIN (286) p. 146.
- Cottulidia forbesiana* is no *Arbacia*; CHECCHIA (49).
- +*Cyclaster zinae* n. sp., Eocene of Novalé, Italy; AIRAGHI (6) p. 8, pl. i.
- +*Cyphosoma* (vide etiam *Phymosoma*):—*C. abbatei*; BEADNELL (22) pp. 19, 21, 26, 32: abnormalities, is neither *Heteractis* nor *Lambertechinus*; FOURTAU (98) p. 121, pl. i: vide Corrigenda. *C. corallare* and *C. koenigi*; YOUNG (347) p. 216. *C. radiatum*; l. c.: vide etiam sub *Gauthieria*. *C. rhenana* Ludw. is *Coptosoma*; LORIOL (195) p. 121.
- Deakia* Pavay, probably *Macropneustes*; LAMBERT (171) p. 156.
- +*Desorella*, diagnosis, *D. grasi*; SAVIN (286) p. 149.
- Desoria* Gray non Cott., vide sub *Linthia*.
- Diadema*:—+*D. grasi*, vide sub *Polydiadema*. *D. setosum*; PUETTER (263) p. 23.
- +*Diademopsis*, diagnosis; SAVIN (286) p. 221. *D. lamberti* n. sp., Middle Lias, Rocchetta near Arcevia, Italy; AIRAGHI (6) p. 1, pl. i. *D. serialis*; SAVIN (286) p. 221.
- +*Dictyo pleurus haimi*; BEADNELL (24) p. 52.
- +*Diplocidaris*, diagnosis; SAVIN (286) p. 287. *D. etalloni*; MAIRE (206) p. 227: REMES (269) p. 63: SAVIN (286) p. 289. *D. gevreyi*; op. cit. p. 299. *D. gigantea*; MAIRE (206) p. 227: MAURY (210) p. 583: SAVIN (286) p. 288.
- +*Diploides recklinghausenensis*, vide sub *Micraster*.
- +*Diplopodia*, diagnosis; SAVIN (286) p. 236. *D. aroviensis*; LORIOL (195) p. 143. *D. brongiarti*; HITZEL (140): SAVIN (286) p. 237. *D. dubia*; op. cit. p. 236. *D. dumasi*; LAMBERT (170) p. 846. *D. variolaria*; SAVIN (286) p. 238.
- +*Disaster* (seu *Dysaster*), diagnosis; SAVIN (286) p. 139. *D. granulatus*; MAIRE (206) p. 219: SAVIN (286) p. 140. *D. (Collyrites) cf. ovalis*; TOULA (318) p. 272. *D. subelongatus*; SAVIN (286) p. 140.
- +*Discoidea* Gray, err. typ., vide *Discoidea*.
- +*Discoidea* Agassiz 1836 (emend *Discoidea* Gray err. typ.) incl. *Discoidea* Klein 1734, *Discoidea* Parkinson 1811 non Renier 1804, *Echinites* Duncan 1889, *Protocyamus* Greg. 1900; BATHER (19) but see LAMBERT in Review.
- Discoidea* Klein, rejected; FOURTAU (97) p. 604.
- +*Discoidea* Parkinson non Renier, syn. of *Discoidea*; BATHER (19).
- +*Discoidea* (seu *Discoidea*), diagnosis; SAVIN (286) p. 178. *D. conicus*; HITZEL (140): SAVIN (286) p. 179. *D. cylindricus*; op. cit. p. 181. *D. decorata*; l. c.: PAQUIER (238) p. 134. *D. dixoni*; YOUNG (347) p. 216. *D. favrei* (= *favrina*); SAVIN (286) p. 182. *D. rotulus*; op. cit. p. 180: HITZEL (140): SAVIN (286). *D. subucula* preferred to *subuculus*; BATHER (19).
- +*Ditremaster* nux; DOUVILLÉ (83) pp. 22, 28: var. *aegyptiacus* Gauthier [Nov. 1902], preferred to *Opissaster fourtaui* Lambert [Feb. 1902]; FOURTAU (98) p. 134, pl. i.
- Dorocidaris papillata*; SCHMIDT (291) p. 23: distrib.; DOEDERLEIN (79) p. 375: vide etiam sub *Cidaris*.
- Dynaster*, vide *Disaster*.
- Echinanthinae*, vide sub *Echinolampidae*.
- +*Echinanthopsis* Mun. Ch. rejected; LAMBERT (171) p. 144.
- Echinanthus* Breynius 1732, and Leske, genotype said to be *E. ovatus* Leske with var. *E. issyaviensis*; LAMBERT (171) p. 142.
- Echinanthus* Gray 1825, and Haime 1853, rejected; LAMBERT (171) p. 143.
- +*Echinanthus*:—*E.* sp. ind.; SCHUBERT (294) p. 280. *E. aremoricus*

- and *E. camerinensis*, vide sub *Pliolampas*. *E. cotteau*; DONCIEUX (81) p. 109. *E. ibericus* n. sp., Eocene, La Antigua Ciudad de Jესpus, Catalonia; LORIOI (195) p. 124, pl. viii: syn. of *Echinolampas morgadesi*; Lambert in Review 1905 and Note 1906. *E. scutella* Cott. non Lam. = *E. arizensis* Cott.: *E. scutella* Lam. is a normal form of the genus: *E. scutella* Leymerie non Lam. = *E. gracilis* Cott.; LAMBERT (171) p. 144. *E. aff. scutella*; SCHUBERT (294) p. 280. *E. subrotundus*; AIRAGHI (6) p. 6, pl. i: DONCIEUX (81) p. 110. *E. subrotundus* Cott., incl. *E. pyrenaicus*, *atazensis*, *rayssacensis*, *pouechi* para. *rousse*li, & *heberti*, all of Cotteau; LAMBERT (171) p. 145. *E. tumidus*; REDLICH (266) p. 342. *E. wrighti*; DONCIEUX (81) p. 109; MIQUEL (215) pp. 19, 24.
- Echinarachnius parma*; CLARK (55) p. 8: GREGORY (120): SCHMITT (292) p. 247: distrib.; DOEDERLEIN (79) pp. 382, 391.
- Echinidae* n. g. vide *Notechinus*.
- †*Echinites* Duncan non Müller & Troschel, nec Leske, nec Gesner, vide *Discoidea*.
- †*Echinites* Leske non Gesner, vide *Conulus*. *E. excavatus* Leske, vide sub *Psammechinus*.
- †*Echinobrissus*, vide etiam *Nucleolites*. *E. atlanticus* n. sp., Upper Cretaceous, Gabun, W. Africa; KOSSMAT (167) p. 585, pl. ii. *E. clunicularis*; LISSAJOUS (183) p. 697. *E. pulvinatus*, probably *Clitopygus*; LAMBERT (172) p. 575. *E. salevensis* n. sp., "calcaire coralligène," Mont Salève, Haute Savoie; LORIOI (195) p. 145, pl. ix: probably *Clitopygus*; LAMBERT in Review. *E. aff. scutatus*; MAIRE (206) p. 221. *E. waltheri*; BEADNELL (22) pp. 19, 27.
- Echinocardium cordatum*; KEMP (152) p. 182: NORDGAARD (230) p. 160: +NEWTON (225): distrib.; DOEDERLEIN (79) p. 384. *E. flavescens*; NORDGAARD (230) p. 160: distrib.; DOEDERLEIN (79) p. 384. *E. pennatifidum*; KEMP (152) pp. 199, 183.
- †*Echinoconus*, vide etiam *Conulus* et *Galerites*. *E. sp.*; FAVRE (91) p. 100. *E. conicus*, cum var. *tumidus*, et *E. sub-rotundus*; YOUNG (347) p. 216. *E. vulgaris*; GOSSELET (116) p. 20.
- †*Echinocorys* (seu *Ananchytes*), diagnosis, *E. cotteau*; SAVIN (286) p. 136. *A. ovata*; BALL (14) p. 88; and (15) pp. 30, 32: DEECKE (69) pp. 15, 17: FAVRE (91) p. 101, pl. ii: FLEGEL (94): TOULA (317) p. 362. *E. papillosus*!; ROESSINGER (278) p. 437. *E. scutatus*; TREACHER (319) p. 158: WHITE (338) pp. 468, 470, 472, 473, 476, 487: var. cf. *pyramidatus*; WHITE (338) pp. 472, 473. *E. vulgaris*; BEADNELL (23) p. 668: GOSSELET (116) pp. 20, 21: ROESSINGER (278) p. 437: ROTHPLTZ (281) p. 81. *E. vulgaris* Breynius 1732; SAVIN (286) p. 137. *E. vulgaris* cum var. *gibbus* et *pyramidatus*; YOUNG (347) pp. 196, 216.
- †*Echinocrinus*, vide *Archaeocidaris*.
- Echinorygamus* vide etiam sub *Fibularia*. †*E. sp.*; MAWSON (211) p. 479. †*E. piriformis*; DOUVILLÉ (83) p. 50. *E. pusillus*; KEMP (152) pp. 182, 199: NOBRE (228) p. 82: NORDGAARD (230) p. 160: distrib.; DOEDERLEIN (79) p. 382. †*E. studeri*; AIRAGHI (5) p. 48. †*E. trans-sylvanicus*; GAAL (103) pp. 357, 362. †*E. umbonatus*; AIRAGHI (5) p. 48.
- †*Echinolampas*, diagnosis; SAVIN (286) p. 167. *E. africanus*; FOURTAT (98) p. 132. *E. anceps* n. sp., Mid. Eocene, Senegal; LAMBERT in CHAUTARD (47) p. 151, pl. v, also p. 145. *E. angulatus*; AIRAGHI (5) p. 52, pl. *E. bredahensis* n. sp., Miocene, Chah-Bel Balbiah, near Bredah, Oran; LORIOI (195) p. 135, pl. ix. *E. crameri*; BEADNELL (24) p. 50. *E. ellipsoidalis*; DOUVILLÉ (83) p. 22. *E. goujoni*; LAPPARENT (176): discussed; LAMBERT in CHAUTARD (47) pp. 142, 152. *E. hemisphaericus*; AIRAGHI (5) p. 53, (8) p. 214: CHOFFAT

- (51) p. 14: SAVIN (286) p. 167. *E. inaequiflos* n. sp., Lutetian of Aude & Hérault; LAMBERT (171) p. 152, pl. v: DONCIEUX (81) p. 110: MIQUEL (215) p. 19. *E. suessi*; REDLICH (266) p. 343. *E. leymeriei*; DONCIEUX (81) p. 110: MIQUEL (215) pp. 19, 24. *E. morgadesi*, vide *Echinanthus ibericus*. *E. osiris*; FOURTAU (98) p. 132. *E. perrieri*; CISNEROS (54) p. 530. *E. prunus* n. sp., Eocene of Fumane, Italy; AIRAGHI (6) p. 7, pl. i. *E. scutiformis*; SAVIN (286) p. 168. *E. stu[d]ieri*; CISNEROS (54) p. 529. *E. yoshiwarae* LORIOL; YABE (346) p. 290.
- Echinolampidae* [melius *Echinolampadinae*] diagnosed as sub-fam. [sic.] of *Echinobrissidae* with tribes *Faujasinae*, *Echinanthinae*, and *Plesiolampinae* [melius *Plesiolampadinae*], all diagnosed; LAMBERT (171) p. 141.
- Echinometra oblonga*, vide *Mortensenia*, *Echinometra mathaei* (Blainv.) distinct from *E. oblonga*; DOEDERLEIN (78) p. 624.
- Echinometridae* n. g., vide *Mortensenia*.
- + *Echinopsis elegans*; DONCIEUX (81) p. 103: LAMBERT (171) p. 134: MIQUEL (215) p. 19.
- + *Echinospatagus inflatus*, vide *Physaster*.
- Echinothrix turcarum*; BOUVIER (37).
- Echinus acutus*; HALLEZ (128) p. 1: distrib.; DOEDERLEIN (79) p. 379: cum. varr. *microstoma* et *norvegicus*; KEMP (152) p. 197. *E. affinis*; SCHMIDT (291) p. 24: distrib.; DOEDERLEIN (79) p. 379. *E. alexandri*; SCHMIDT (291) p. 24: distrib.; DOEDERLEIN (79) p. 378. *E. elegans*; NORDGAARD (230) pp. 160, 240: SCHMIDT (291) p. 23: distrib.; DOEDERLEIN (79) p. 378. *E. esculentus*; HØRRING (142) pp. 185, 189: KEMP (152) pp. 182, 197: NOBRE (229) p. 134: NORDGAARD (230) p. 160: WOODLAND (344): distrib.; DOEDERLEIN (79) p. 379: see further under II, F, viii. *E. fueginus* n. sp.; PHILIPPI (255). *E. gilchristi*, probably syn. of *E. hirsutus*; DOEDERLEIN (79) p. 392. *E. gracilis*; KEMP (152) p. 199. *E. hirsutus* n. sp., 70–500 m., off C. of Good Hope; DOEDERLEIN (78) p. 623, no fig. *E. magellanicus*, vide *Notechinus*. *E. margaritaceus*; HODGSON (141). *E. microtuberculatus*; BAGLIONI (120): PETER (251): see further under II, F, viii. *E. miliaris*; KEMP (152) pp. 181, 206: WOODLAND (344) p. 321. + *E. miliaris* compared with *E. microtuberculatus*; CHOFFAT (52) p. 748: this not congeneric with *E. esculentus* and *E. melo*, LAMBERT in Review. + *E. neglectus*; NEWTON (225). *E. norvegicus*; NORDGAARD (230) p. 160. *E. sphaeru*; COLGAN (61) p. 212. *E. tenuispinus*, measurements; KEMP (152) pp. 183, 197, and fig.
- + *Emallaster*, diagnosis; SAVIN (286) p. 125. *E. couloni*; op. cit. p. 127. *E. crininenais* (p. 42), *E. delgadoi* (pp. 12, 15, 42), *E. lepidus* (p. 30); CHOFFAT (51). *E. oblongus*; SAVIN (286) p. 125. *E. texanus*; STANTON in CRAGIN (64) p. 31.
- + *Eolampus toucasi*; DONCIEUX (81) p. 107.
- + *Eosalenit* n. g. of *Pedininae* with genotype *E. mirandu* n. sp., Oxfordian of Joyeuse, Ardèche, holotype in Colln. Gevrey; SAVIN (286) p. 311, pl. ii.
- + *Epiaster*, diagnosis; SAVIN (286) p. 120. *E. cutumbellensis*; CHOFFAT (50) p. 58. *E. crassissimus* (p. 120), *E. distinctus* (p. 121); SAVIN (286). *E. herberti*; DE STEFANO (75) pp. 350, 357. *E. polygonus*; SAVIN (286) p. 121. *E. trigonalis* and cf.; HITZEL (140). *E. whitei*; STANTON in CRAGIN (64) p. 31.
- Escheria* Merian non Heer, vide sub *Linthia*.
- + *Euspatagus* preferred to *Eupatagus* and *Brissoides* (q. v.); FOURTAU (97) p. 603. *E. blanckenhorni* (p. 36), *E. cairensis* (p. 52), *E. formosus* (p. 36); BEADNELL (24). *E. formosus*; SCHUBERT (293) p. 168. *E. libycus*, vide *Perispatagus*. *E. ornatus*; DOUVILLÉ (83) pp. 17, 18,

- * *Linthia* sp., Nigeria; LAPPARENT '177. *L. arizanae*; DONCEUX '81 p. 105. *L. utaria* n. sp., Lutetian, Carnettes-Hauts, Amie; LAMBERT '171, p. 155, pl. v: DONCEUX '81 p. 105. *L. cavernosa*, incl. *L. archeriana* and *L. canchenae*; FOURTAU '98 p. 138. *L. decorata*; LAPPARENT '176. *L. insignis*; DONCEUX '81 p. 104: variations in fasciole; LAMBERT '171, p. 156. *L. joannis bechani* Oppenh. identical with "*Hemister pullus* Stol. & H. aff. *crinitus* Stol." of C. Burckhardt, 1901; WILCKESS '341, p. 139. *L. locardi* TONINONET is a *Schizobrius*; LAMBERT '171, p. 156. *L. orthogyni*; DONCEUX '81, p. 105. *L. rousseli*; l. c.: LAMBERT '171, p. 159: MIQUEL '215, pp. 24, 25. *L. sarini*; DONCEUX '81, p. 105: MIQUEL '215, p. 24. *L. scaraboides*; REDLICH '266, p. 342.
- † *Loriella* n. g. [?] of *Pygasteridae*: with genotype *Cidaris ludovici* Menegh., Mid Lias; FUCINI '102.
- † *Lovenia lorioli* Cott. is *Hemipatagus*; LAMBERT (173) p. 884. *Lovenidae* [sic] a subfam. of *Prospatangidae*, with tribes *Platybrissinae*, *Hyperpataginae*, *Marettinae*, *Eupataginae*, *Breginae*; LAMBERT (171) p. 162.
- † *Macropneustes* only represented in Egyptian Eocene by one indeterminable specimen; FOURTAU '97 p. 610. *M. bertrandi* n. sp., Lutetian, Minerve, Hérault; LAMBERT '171 p. 161, pl. v: DONCEUX '81 p. 104: MIQUEL '215, p. 20. *M. brissoides*?; SCHUBERT '293 p. 165. *M. crassus*, vide *Plagiopneustes*. *M. deshayeri*; REDLICH '266 p. 342. *M. meneghinii*; DOUVILLÉ (83) p. 46. *M. schweinfurthi* Mayer-Eymar is a *Pericomaus spatangoides*; FOURTAU (98) p. 134. *M. similis* Mayer-Eymar, unintelligible; FOURTAU (97) p. 610.
- † *Magnolia*, diagnosis, *M. decorata* (p. 194); *M. globulus* (p. 195); SAVIN (286). *M. nodulosus*; l. c.: MAIRE (206) p. 232. *M. pulchella*; SAVIN (296) p. 196.
- † *Marettus*:—*M. guehardi* n. sp., Burdigalian, Gattières Alpes-Maritimes; LAMBERT (173) p. 882, pl. lix. *M. sacconi* n. sp., Miocene, C. Dogana, near S. Maria Tiberina, Umbria; AIRAGHI (5) p. 53, pl.
- † *Megapneustes*, ? prymnadete or prymnodesmian; *M. grandis* holotype is prymnadete, but other specimens are prymnodesmian; *M. lorioli* is prymnadete always; *M. sickenbergi* uncertain; FOURTAU (97) p. 609. *Megapneustidae* n. fam. [!] for *Megapneustes*, *Peripatangus*, *Plagiopneustes*, and *Plagiobrius*; FOURTAU (97) p. 612.
- Mellita pentapora*; CLARK (55) p. 8. *M. testudinata*; GRAVE (119).
- † *Melonites*:—*M. crassus*, *M. multiporus*; ULRICH (321) p. 33.
- † *Mesodiadema*:—*M. lamberti* n. sp., Middle Lias, Rocchetta near Arcevia, Italy (pl. i), *M. marcomissae* is Toarcian; AIRAGHI (6) p. 2.
- Mesopatangidae*; LAMBERT (171) p. 153: said to be n. subfam. [sic] of *Brissidae*; LAMBERT in Review.
- † *Metaporkinus*, diagnosis; SAVIN (286) p. 137. *M. convexus*; CISNEROS (53) p. 299: REMES (273): SAVIN (286) p. 138. *M. guymardi*: op. cit. p. 139.
- † *Micraster*:—*M. arenatus*; MAURY (210) p. 587. *M. breviporus*; FLEGEL (94) & (95): GOSKELET (116) pp. 18, 20, 42: (?) ROESSINGER (378) p. 437. *M. cf. brevis*; LAMBERT (169) p. 94. *M. coranguinum*; GOSKELET (116) p. 20: LAMBERT (169) pp. 92, 95: WHITE (338) pp. 468, 470, 473 & (?) 472: YOUNG (347) p. 216: young minutely descr.; VALETTE (324) p. 39, figg.: var. *lutor*; WHITE (338) p. 468: var. *rostratus*; YOUNG (347) p. 198. *M. cor-bovis*; TREACHER (319) p. 157: YOUNG (347) p. 217. *M. cortestudinarium*; FLEGEL (94): GOSKELET (116) pp. 18, 20, 21, 42: TREACHER (319) p. 158. *M. decipiens*; GOSKELET (116) p. 18: LAMBERT (169) p. 92. *M. icauensis*: op. cit. pp. 91, 94. *M. leskei*; l. c.: GOSKELET (116) p. 18: MAURY (210) p. 586: YOUNG (347) p. 217. *M. praecursor*; TREACHER (319)

- p. 158: YOUNG (347) pp. 196, 216: var. *cor-testudinarium*; l. c. *M. recklinghausenensis* (Schlueter sub *Diplodetus*), descr.; WEGNER (333) pp. 123, 125, 150, pl. vii.
- †*Micropsidia*:—*M. gauthieri*; DONCIEUX (81) p. 101. *M. pegoti*; l. c.: MIQUEL (215) pp. 20, 24. *M. savini*; DONCIEUX (81) p. 102.
- †*Micropina baudoni* is a *Circopeltis*; LAMBERT (171) p. 136.
- †*Micropsis*, diagnosis; SAVIN (286) p. 308. *M. lussieri*; CISNEROS (54) p. 530. *M. savini* n. sp., Santonian near Martigues, B. du Rhone; LAMBERT in SAVIN (286) p. 308, pl. ii. *M. stachei*; SCHUBERT (293) p. 168.
- †*Miotoxaster*, diagnosis; SAVIN (286) p. 128. *M. collegnoi*; l. c.: PELLAT (244 & 245): SAYN (287) p. 622: compared with *Toxaster ricordeaui* (q.v.) and var. *Leymeriei*; LAMBERT (170) p. 846. *M. exilis*; CHOFFAT (51) pp. 27, 30.
- Moera utropos*, see II, F, viii; GRAVE (119).
- †*Monodiadema*, discussed; LAMBERT (172) p. 570. *M. cotteau*; DOUVILLÉ (84): PERVINQUIÈRE (250): structure of ambulacra; LAMBERT (172) p. 571, pl. xxii.
- Mortensenia* n. g., with genotype *Echinometra oblonga* Blainville; DOEDERLEIN (78) p. 623.
- Neospatangidae* [sic], n. subfam. of *Brissidae*, distinguished from *Mesospatangulae*, divided into tribes *Opissasterinae*, *Schizasterinae*, *Prenasterinae*, *Pericosemidae* [sic], *Brissopsinae*, *Macropneustinae*; LAMBERT (171) p. 153.
- †*Noeltingia monteili*, provenance; LAPPARENT (176).
- Notechinus* n. g., with genotype *Echinus magellanicus* Philippi; DOEDERLEIN (78) p. 623.
- Nucleolidae*; LAMBERT (171) p. 141: said to be n. subfam. of *Echino-brissidae*; LAMBERT in Review [melius *Nucleolitinae*].
- †*Nucleolites* (vide etiam *Echinobrisus*):—*N. chaperi*, vide sub *Nucleopygus*. *N. grignonensis* vide *Plagiopygus*. *N. cf. olferi*; TOULA (318) p. 321.
- †*Nucleopygus*, diagnosis (p. 160), *N. chaperi* (Cott. sub *Nucleolites*) (p. 162), *N. roberti* (p. 161); SAVIN (286).
- †*Opissaster* discussed, *O. fourtaui* Lambert [Feb. 1902], considered syn. of *Ditremaster nur*, var. *uegyptiacus* Gauthier [Nov. 1902]; FOURTAU (98) p. 134.
- Orechinus* n. g., with genotype *Trigonocidaris monolini* A. Agass.; DOEDERLEIN (78) p. 622.
- †*Oriolampas* Mun. Ch., olim *Neolampas*, with genotype *Amblypygus michelini* Cott., slight distinction from *Pleniolampas*; LAMBERT (171) p. 149: is syn. of *Plesiopolampas*; LAMBERT in Review. *O. michelini*; CISNEROS (54) p. 529: DONCIEUX (81) p. 102: DOUVILLÉ (83) p. 41: LAMBERT (171) p. 150: MIQUEL (215) p. 20. *O. rousseli*; op. cit. p. 24: DONCIEUX (81) p. 107: added notes; LAMBERT (171) p. 151.
- Orthocidarinae*, subfam. suppressed, *Orthocidaris* being a Pedinid allied to *Gymnodiadema*; LAMBERT (171) p. 132.
- †*Orthocidaris*, diagnosis, *O. inermis*; SAVIN (286) p. 218.
- †*Orthopsis*, diagnosis; SAVIN (286) p. 222. *O. sp. ind.*; AIRAGHI (7) p. 90, pl. i. *O. repellini*; CHOFFAT (51) p. 9: SAVIN (286) p. 222.
- †*Palaechinus quadrilateralis* J. Wr. holotype was from Ballynahointra, 2½ miles W. of Middleton, Cork; LAMPLUGH (174) p. 29.
- Palaeolampas chuni* n. sp., 371 m. Siberut Str., off Sumatra, no fig., *P. crassa*, *P. sumatrana* n. sp., ibid., no fig.; DOEDERLEIN (78) p. 624.
- Paracentrotus agulhensis* n. sp., 500 m., Agulhas Current; DOEDERLEIN (78) p. 623, no fig. *P. lividus* (vide etiam sub *Strongylocentrotus et Toxopneustes*); KIERNIK (154) & (155): see also under II, F, viii,

- Fig. 209.** *diffusus* et *reflexinatus* based on pigment of ovum; (SAR-
BOWARD 107, p. 601, pl. xvii.)
- +*Parneideria* vide etiam sub *Cidaris*, diagnosis p. 257. *P. hutchinsoni*
p. 258. *P. blumenbachii* p. 270. *P. spinulosus* p. 269. *P. zschalkii*
p. 269; SAVIN (286).
- Parnekeia* vide etiam sub *Echinus* et *Parmanechinus*:—*P. microstom-*
ulatus; KRENTZ (154 & 155: see further under II. F. viii. vide
etiam *Parmanechinus cupressus*. *P. miltaria* distrib.: DOEDERLEIN (79)
p. 373, see further under II. F. viii.
- +*Parmanechinus* n. g., pro *Stenaster* Lamb. non Bill, q. v.: LAMBERT in
Review of LAMBERT 171, p. 63, Jan. 1906.
- +*Pedina*, diagnosis; SAVIN (286), p. 217. *P. gervillii*: MAIRE (205)
p. 232. *P. sublaeva*; op. cit. p. 233; SAVIN (286) p. 217.
- Pedissina*, n. g. *Evanesia* q. v.
- +*Pelidada*, diagnosis; SAVIN (286), p. 207. *P. clathretus*; WOLLERANS
(242). *P. lordyi*; PEROS (248, pp. 363, 369, 375; DAVEY (66) p. 32.
P. stellulatus; L. c.: SAVIN (286), p. 206. *P. cf. stellatus*; PEROS
(248, p. 369). *P. noduli*; HITZEL (140) SAVIN (286) p. 206. *P.*
valletti; op. cit. p. 207. *P. wrighti*; DAVEY (66) p. 31.
- Perinaster* d'Orb., vide sub *Linthia*.
- +*Pericommia*;—*P. nelsoni* McCoy, probably a *Peribriatus*: LAMBERT 171,
p. 154. *P. apertangoides*; FOURETAT (96) p. 133.
- +*Peripatungus* n. s. g. of *Euspatungus*, with genotype *E. libycus* de Lox.,
and comprising *Hypopatungus hispanicus* Lamb.: FOURETAT (97);
p. 686.
- Phormosoma eulenicum* n. sp., 1469 m., G. of Aden, no fig. *P. indicum*
n. sp., 463-977 m. off W. Sumatra and E. Africa, no fig.: DOEDERLEIN
(79) p. 621. *P. placenta*; KEMP (152), pp. 197, 183; SCHMIDT (391)
p. 23: et var. *nigabaei*, distrib.: DOEDERLEIN (79) p. 376.
- +*Phyllobriatus*, diagnosis, with note by LAMBERT; SAVIN (286) p. 163.
P. sp. non-deter. aff. *grevillii*; DOUVILLÉ (84). *P. jourdyi* n. sp.,
Kimmeridgian, Tatahouine, Tunis; LAMBERT (172) p. 574, pl. xiii.
P. kiliani; PELLAT (245). *P. neocomiensis*; LAMBERT (170) p. 641:
SAVIN (287) p. 622; SAVIN (286) p. 164. *P. nicoleti* and *P. remaudi*;
L. c.
- +*Phymosoma* (vide etiam *Cyphosoma*), diagnosis (p. 204), *P. loryi* (p. 205;
SAVIN (286)).
- +*Phymaster* maintained, *P. inflatus* (d'Orb.) discussed, from Senegal; LAM-
BERT in PERON (247).
- +*Pithodia* Pomel, genotype *Discoidea cylindrica*; BATHER (19) p. 148.
- +*Plagiostoma granatum* (d'Orb.) Pomel, made *Clitopygus grani*; SAVIN
(286) p. 159.
- Plagiocidaris*, err. typ. pro *Plegiocidaris*; KILIAN (156).
- +*Plagiopneustes* n. g. of *Spatungidae* *Pygmnodesminae*, with genotype
Micropneustes crissalis Desor; FOURETAT (97) p. 609.
- +*Plagiopygus*, Tertiary spp. usually called *Pygorrhynchus*, genotype is
Nucleolites grignomensis Defr.; LAMBERT (170) p. 843, footnote:
LAMBERT (171) p. 146. *P. daradensis* n. sp., Mid. Eocene, Balol,
Senegal; LAMBERT in MEUNIER (212) p. 63. *P. gauthieri*; DONCEUX
(81) p. 102; MIQUEL (215) p. 20: n. var. *minor*, Lower Lutetian,
Aude; LAMBERT (171) p. 147. *P. surini* (Cott. sub *Pygorrhynchus*);
op. cit. p. 148; DONCEUX (81) p. 109; MIQUEL (215) pp. 20, 25.
- +*Plegiocidaris* (vide etiam sub *Cidaris*), diagnosis (p. 257), *P.* sp. non-
deter., Upper Aptien, Isère, radiale (p. 267, pl. vii), *P. alpina* (p. 263),
P. cf. alpina, interambulacra (p. 263, pl. iii), *P. charmassesi* (p. 257),
P. coronata (p. 259); SAVIN (286). *P. cucumifera*; op. cit. p. 257:
KILIAN (156) p. 743. *P. falsani*, interambulacra and radiales
(p. 312, pl. vii), *P. friburgensis*, radiales (p. 264, pl. iv); SAVIN (286).

- P. geveyi* n. sp., Hauterivian, St. Pierre-de-Chérennes, Isère, radioles only; LAMBERT & SAVIN (286) p. 265, pl. vi. *P. gibberula* (Ag. sub *Cidaris*), radioles; SAVIN (286) p. 314, pl. iv. *P. glandifera*; op. cit. p. 260: KILIAN (156) pp. 806, 818. *P. laeviuscula* (p. 258), *P. lineolata*, radioles (p. 265, pl. vii), *P. locardi* (p. 258), *P. loryi* (p. 262); SAVIN (286). *P. mattheyi*; KILIAN (156) p. 781. *P. meridanensis*, radiole (p. 262, pl. iv), *P. propinqua* (p. 261), *P. punctata* (p. 266), *P. spinigera*, radioles (p. 266, pl. vii); SAVIN (286). *P. spinulosa* and *P. zschokkei*; KILIAN (156) p. 743.
- Plesgiocidaris*; Lambert in Review of KILIAN (156), Rev. paleozool. x, p. 61: err. typ. pro *Plegiocidaris*.
- Plesiaster* Pomel, vide sub *Linthia* et *Pseudobrius*.
- Plesiolamp[ad]inae*, vide sub *Echinolampidae*.
- + *Plesiolampas*, distinctness from *Oriolampas* questioned; LAMBERT (171) p. 150.
- + *Plesiospatangus*, the genotype *P. cotteani* redescr.; FOURTAU (97) p. 611, pl. i.
- Plesechinus hirsutus* n. sp., Denmark Straits, N. Atlantic, 450–1300 fm., *P. nordenskiöldi* n. sp., Shag Rocks Bank, Antarctic, 160 m.; MORTENSEN (220) p. 242, no figg.
- + *Pliolampus*:—*P. aremoricus* (p. 50, pl.), *P. camerinensis* (p. 51); AIRAGHI (5) pl. *P. gourdoni*, syn. of *Echinanthus arisensis* Cott.; LAMBERT (171). *P. silvestrii* n. sp., Miocene, C. Dogana, near S. Maria Tiberina, Umbria (p. 51), *P. vasalli* [= *vassali*] (Wright sub *Pygorrhynchus*) (p. 49); AIRAGHI (5) pl. *P. vilanovae*; CISNEROS (54) p. 529.
- Podocidaris prionigera* and *P. scutata*, vide *Pygmaeocidaris*.
- + *Polycidaris*, diagnosis (p. 270), *P. collenoti*, test descr., and *P. legayi* (p. 271); SAVIN (286).
- + *Polydiadema*, diagnosis (p. 232), *P. grasi* (Desor, sub *Diadema*) (p. 233); SAVIN (286). *P. rhodani*; l. c.: HITZEL (140).
- Porocidaris* (vide etiam sub *Cidaris*):—+ *P. granulosa*; KILIAN (156) p. 818. *P. purpurata*; SCHMIDT (291) p. 23: distrib.; DOEDERLEIN (79) p. 376. + *P. schmideli*; HAWELKA (131) p. 117: SCHUBERT (293) pp. 165, 168. + *P.*, cf. *schmideli*; SCHUBERT (294) p. 280. + *P. serrata*; DOUVILLÉ (83) p. 50.
- + *Porpitella*:—*P. concava*; LAMBERT (171) p. 138. *P. doncieuxi* n. sp., Lower Lutetian, near Saint-Chinian, Hérault; op. cit. p. 136, pl. v: DONCIEUX (81) p. 111: MIQUEL (215) p. 18. *P. fibularoides* distinguished from *P. hayesiana*, probably incl. *Scutellina calvimontana* Cott. (p. 138), *P. porpita*, a fragment figd. by Tournouer is refd. to *Stenaster labriei* (q. v.) (p. 140); LAMBERT (171).
- Pourtalesia jeffreysi*, distrib.; DOEDERLEIN (79) p. 385. *P. miranda*; KEMP (152) p. 206: (?) ; SCHMIDT (291) p. 24. *P. paradoxa* n. sp., S. of Iceland, 843–912 fm.; MORTENSEN (220) p. 243, no fig. *P. phyle*; KEMP (152) p. 206. *P. vandeli* n. sp., Davis Str., N. Atlantic, 845–1715 fm.; MORTENSEN (220) p. 242, no fig.
- + *Prenaster*:—*P. alpinus*; DONCIEUX (81) p. 106. *P. desori*; CISNEROS (54) p. 529.
- Prionechinus* distinguished from *Arbacina*; CHECCHIA (49).
- Protenaster* Pomel, vide sub *Linthia*.
- + *Protocidaris* sp. radiole; SMYČKA (303) p. 60.
- + *Protogyamus* Gregory, vide *Discoidea*.
- Psammecinus* (vide etiam sub *Echinus*), diagnosis (p. 196), + *P.* sp. (p. 197, pl. viii); SAVIN (286). *P. cupreus*, holotype in Senckenberg Mus. is not syn. of *Notechinus magellanicus*, but appears to be *Parechinus microtuberculatus*; DOEDERLEIN (78) p. 623. + *P. excavatus* (Leske sub *Echinites*); LORJOL (195) p. 131, pl. ix. *P. microtuberculatus*; KRAHELSKA (168). + *P. miliaris*; CHOFFAT (52).

- +*Psophechinus*, diagnosis, & *P. vacheyi*; SAVIN (286) p. 190, pl. i.
- +*Pseudobrissus* n. g. of *Brissidae*, genotype *Brissus cornicus* Cott., = *Plesioaster* Pomel 1887 pars non 1883; LAMBERT (171).
- +*Pseudocidaris*, diagnosis; SAVIN (286) p. 212. *P. dunifera*; CHOFFAT (51) pp. 9, 10, 11, 21, 36 & (?) pp. 27, 36; PARONA (242) p. 66; TOULA (317) p. 360: radioles; SAVIN (286) p. 213, pl. ii. *P. cf. dunifera*; CISNEROS (53) p. 300: radioles; AIRAGHI (7) p. 88, pl. i. *P. crispicans*, radiole; AIRAGHI (7) p. 89, pl. i. (?) *P. ellenbecki* n. sp., Kimmeridgian, Atschabo, Somaliland, radioles only; DACQUÉ (65) p. 124, pl. xiv. *P. gauthieri* n. sp., Kimmeridgian, Tatahouine, Tunis, radioles previously referred by Gauthier to *Hemicidaris zeguelensis*; LAMBERT (172) p. 570, pl. xxii. *P. mammosa*; THÉVENIN (313) p. 87. *P. ovifera*; CISNEROS (53) p. 300. *P. quenstedti*; MAIRE (206) p. 228. *P. thurmanni*; CISNEROS (53) p. 300: SAVIN (286) p. 214.
- +*Pseudodiadema*, diagnosis; SAVIN (286) p. 228. *P. areolatum*; ROTHPLETZ (281) p. 50. *P. aroviense*; MAIRE (206) p. 229. *P. brongniarti*; DAVEY (66) p. 34. *P. carthusianum*; SAVIN (286) p. 229. *P. cotteri* n. sp., Aptien, Ribafria, Portugal; LORIOLE (195) p. 136, pl. ix. *P. dupini*; PERON (248) p. 369. *P. duplicatum* (p. 229), *P. florescens* (p. 230); MAIRE (206). *P. (Helicodiadema) fragile*; WHITE (328) pp. 470, 487. *P. cf. guerangeri*; CHOFFAT (51) p. 27. *P. malbosi*; BRIVES (42) p. 87. *P. mamillanum*; MAIRE (206) p. 231. *P. cf. mamillanum*; THÉVENIN (313) p. 87. *P. michelini*; WOLLEMAN (343). *P. picteti*; PERON (248) p. 365. *P. pidanceti*; MAIRE (206) p. 231. *P. priscum*; LEE (178) p. 84. *P. pseudodiadema*; MAIRE (206) p. 230: MAURY (210) p. 583. *P. rotulare*; DAVEY (66) p. 33. *P. scruposum* (pp. 7, 35, 36), *P. sculptile* (pp. 11, 27, 29, 30); CHOFFAT (51). *P. superbum*; AEBERHARDT (1) p. 442. *P. tetragramma*; MAIRE (206) p. 230. *P. ? uniforme* discussed; SAVIN (286) p. 228. *P. variolare*; DAVEY (66) p. 33. *P. wrighti*; LISSAJOUS (183) p. 697.
- +*Pseudosalenia*, diagnosis (p. 211), *P. aspera* (p. 212); SAVIN (286).
- +*Pygaster*, diagnosis & *P. truncatus*; SAVIN (286) p. 187. *P. umbrella*; MAIRE (206) p. 222.
- Pygasteridae*, n. g., vide *Loriolella*.
- Pygaulidae*; LAMBERT (171) p. 141: said to be n. subfam. of *Echino-brissidae*; LAMBERT in Review.
- +*Pygaulus*, diagnosis; SAVIN (286) p. 154. *P. desmoulinsi*; l. c.: LAMBERT (170) p. 841: SAYN (287) p. 622. *P. lamberti* n. sp., Upper Barremian, between Cognin and Malleval, Isère; SAVIN (286) p. 156, pl. i. *P. cf. ovatus* & *P. renevieri*; HITZEL (140).
- Pygmasocidaris* n. g. with genotype *Podocidaris prionigera*, A. Agass. and probably comprising *P. scutata*; DOEDERLEIN (78) p. 621.
- +*Pygorhynchus* Ag. non Auctt., diagnosis; SAVIN (286) p. 169: the genotype is *Catopygus obovatus* and not any Tertiary species, vide *Plagiopygus*; LAMBERT (170) p. 843, footnote, & (171) p. 146. *P. cylindricus*; SAVIN (286) p. 171. *P. delbosi*; DOUVILLÉ (83) p. 22. *P. mayeri*; REDLICH (266) p. 343. *P. nucula* (Desor sub *Botriopygus*); SAVIN (286) p. 169. *P. rostratus* vide sub *Pygurus*. *P. savini* Cott., reld. to *Plagiopygus*; LAMBERT (171) p. 148. *P. sueuri* (Desor sub *Botriopygus*) (p. 171), *P. testudo* (Desor sub *Botriopygus*) & *P. valdensis* (de Lor. sub *Botriopygus*) (p. 170); SAVIN (286).
- +*Pygorhytis*, diagnosis & *P. analis*; SAVIN (286) p. 147.
- +*Pygurus*, diagnosis; SAVIN (286) p. 172. *P. sp.*; CRAGIN (64) p. 36. *P. africanus*; CHOFFAT (50) p. 56. *P. blumenbachi*; THÉVENIN (313) p. 87; MAIRE (206) p. 219. *P. costatus*; op. cit. p. 220. *P. depressus*; LISSAJOUS (183) p. 697. *P. aff. durandi*; PERVINQUIÈRE (250). *P. haussmanni*; MAIRE (206) p. 220. *P. lampas*; PETRASCHECK (254) p. 415. *P. loryi*; SAVIN (286) p. 172. *P. medei*; DOUVILLÉ (84): added notes, belongs to s.-g. *Mepygurus* Pomel; LAMBERT (172)

- p. 575. *P. michelini*; KILIAN (156) p. 760. *P. montmolini*, descr.; SAVIN (286) p. 173. *P. pentagonalis*; MAIRE (206) p. 220. *P. perreti* n. sp., Kimmeridgian, Tatahouine, Tunis; LAMBERT (172) p. 575, pl. xxii. *P. rostratus*; CHOFFAT (51) pp. 7, 35, 36: ROTHPLETZ (281) p. 20: SAVIN (286) p. 174: WEGNER (333) pp. 139, 144, 149.
- +*Pyrina*, diagnosis (p. 149), *P. cylindrica* (p. 151); SAVIN (286). *P. icaunensis*; MAIRE (206) p. 221. *P. incisa*; CHOFFAT (51) p. 9: SAVIN (286) p. 150. *P. pygaea*; op. cit. p. 151: ROLLIER (280). *P. aff. pygaea*; CHOFFAT (51) p. 10. *P. subsphaeroidalis*; SAVIN (286) p. 152.
- +*Rachiosoma*, diagnosis (p. 205), *R. paucituberculatum* (p. 206); SAVIN (286).
- +*Rhabdocidaris* (vide etiam sub *Cidaris*), diagnosis; SAVIN (286) p. 275. *R. sp.* nondescr.; PAQUIER (238) p. 134. *R. (Leiocidaris) abbatei*, radioles descr.; FOURTAU (98) p. 130, pl. i. *R. capelloi*; CHOFFAT (50) pp. 48, 58. *R. caprimontana*; MAIRE (206) p. 226: ROTHPLETZ (281) p. 51: SAVIN (286) p. 278. *R. cf. caprimontana*; KILIAN (156) p. 781. *R. cerioi* n. sp., radioles; AIRAGHI (7) p. 87, pl. i. *R. copeoides*; MAIRE (206) p. 225: SAVIN (286) p. 278. *R. aff. cortazari*; CHOFFAT (51) p. 42. *R. aff. crassissima*; MAIRE (206) p. 226. *R. delgadoi*; CHOFFAT (51) p. 7. *R. delphinensis* n. sp., Hauterivian, St Pierre-de-Chèrennes, Isère; LAMBERT & SAVIN (286) p. 284, pl. vi. *R. gaillardoti*, radioles descr.; FOURTAU (98) p. 130, pl. i. *R. georeyi*; SAVIN (286) p. 280. *R. horrida*; LISSAJOUS (183) p. 691: SAVIN (286) p. 277. *R. impar*; l. c. *R. cf. insuetus*; CHOFFAT (51) p. 9. *R. itala*, discussed, not found in Egypt, vide *R. jovis-ammonis*; FOURTAU (98) p. 131. *R. jacobi* n. sp., Upper Aptian, Le Rimet, Isère; LAMBERT & SAVIN (286) p. 286, pl. viii. *R. jovis-ammonis* n. sp., based on *R. itala* de Lor. non Laube, Eocene, Syouah, Egypt; FOURTAU (98) p. 132. *R. megalacantha*; MAIRE (206) p. 226. *R. mespilum*; DONCIEUX (81) p. 99: MIQUEL (215) pp. 19, 24. *R. mitrata*; MAIRE (206) p. 225. *R. moreau*; SAVIN (286) p. 276. *R. nobilis*; op. cit. p. 279: MAURY (210) p. 583. *R. orbignyana*; MAIRE (206) p. 226: THÉVENIN (313) p. 87. *R. pavimentatus* and *R. petitclerci*; SAVIN (286) p. 281. *R. pouechi*; DONCIEUX (81) p. 99: MIQUEL (215) p. 24. *R. salvas*; SAVIN (286) p. 281. *R. suberrata*; DONCIEUX (81) p. 100: MIQUEL (215) p. 24. *R. aff. thurmanni*; MAIRE (206) p. 226. *R. tuberosa*; CHOFFAT (51) pp. 7, 35: PARONA (242) p. 66: radioles; AIRAGHI (7) p. 86, pl. i: SAVIN (286) pp. 282, pl. vii.
- +*Rhabdopleurus ataxensis*; DONCIEUX (81) p. 103.
- +*Rhynchopygus abundans*; BALL (15) p. 30.
- +*Rotuloides fimbriata* allied to *Heliophora*; LAMBERT in BOISTEL (35) p. 205.
- Salenia*, diagnosis, and +*S. depressa*; SAVIN (286) p. 209. +*S. dombensis*; CHOFFAT (50) p. 56. +*S. folium-querci*; PERON (248) p. 365. +*S. garumniensis* n. sp., Lower Danian of Tuco, Hte. Garonne; VALETTE (324) p. 27, figg. +*S. geometrica*; YOUNG (337) p. 216. +*S. grasi*; SAVIN (286) p. 210. *S. hastigera*; RICHARD (276) p. 3. +*S. incurvatata* Cott. distinguished from *S. granulosa* Forbes; VALETTE (324) p. 24. +*S. prestensis*; AIRAGHI (7) p. 89, pl. i: PARONA (242) p. 66: SAVIN (286) p. 210.
- +*Salenidia gauthieri* n. sp., *Marsupites* zone, Saint-Martin-du-Terte, near Sens, Yonne; VALETTE (324) p. 30, figg.
- Schizaster*:—+*S. aff. africanus*; BEADNELL (24) p. 52. +*S. airaghi*; AIRAGHI (6) p. 10. +*S. ataxensis*; DONCIEUX (81) p. 106. +*S. batheri* n. sp., Mid. Eocene, Pyramides de Ghizeh; FOURTAU (98) p. 135, pl. i. +*S. canaliferus*; BASSANI (16). +*S. catalaunicus* n. sp., Eocene, La Antigua Ciudad de Jempus, Catalonia; LORJOL (196) p. 126, pl. ix.

- +*S. foveatus* incl. *Hemiasiter fourtaui* Mayer-Eymar; FOURTAU (98) p. 137. *S. fragilis*; NORDGAARD (230) p. 160: distrib.; DOEDERLEIN (79) p. 385. +*S. globulus* (?); SCHUBERT (293) p. 168. +*S. aff. globulus*; SCHUBERT (294) p. 280. +*S. howa* n. sp., Eocene, Makamby, Madagascar, type at Strassburg; TORNUER (316) p. 329, pl. xlv. +*S. jeani* n. sp., Lutetian, Vallée de la Valette, near Aragon, Aude; LAMBERT (171) p. 159, pl. v: DONCIEUX (81) p. 106. +*S. karveri*; GAÁL (103) pp. 344, 362. +*S. mirabilis* n. sp., Mid. Eocene, Novale, Italy; AIRAGHI (6) p. 9, pl. i. +*S. obesus*; DONCIEUX (81) p. 106. +*S. rotundatus*; CLARKE (56) p. 415: (?) PARK (241) p. 521. +*S. rousseli*; DONCIEUX (81) p. 106: MIQUEL (215) p. 20. +*S. santamariai*, young; FOURTAU (98) p. 137, pl. i. +*S. scillae*; AIRAGHI (8) p. 216. +*S. studeri*; AIRAGHI (8) p. 10. +*S. zitteli*, incl. *S. mobattamensis* as var., and *S. rohlfsi* as syn.; FOURTAU (98) p. 138.
- +*Schizobrissus* Pomel, genotype *Brissus cruciatus* Ag., distinguished from *Deakia*, comprises *Linthia locardi* Tournouer; LAMBERT (171) p. 156.
- +*Scutella*:—*S. germanica* Beyr., as figd. by Noetling under *Echinorachnius* comprises two spp., of which the true one is referred to *Stenaster* Lamb.; LAMBERT (171) p. 138. *S. subtetragona*; DOUVILLÉ (83) pp. 17, 18, 27. *S. vindobonensis*; GAÁL (103) pp. 344, 362.
- +*Scutellidae*, n. g. vide *Stenaster*.
- +*Scutellina*:—*S. concava* Gauth., referred to *Porpitella*; LAMBERT (171) p. 138. *S. fibularioides*, vide sub *Porpitella*. *S. patella*; MULDER (222). *S. superu*, vide sub *Porpitella*.
- +*Scutulum* Tournouer, refd. to *Dendrasteridae*; LAMBERT (171) p. 140.
- +*Spaniocyphus*, diagnosis, and *S. theveneti*; SAVIN (286) p. 191.
- Spatangidae*, n. gg. *Plagiopneustes*, *Heterospatangus*, n. s-g. *Perispatangus* (qq. v).
- Spatangus*:—+*S. cf. austriacus*; GAÁL (103) pp. 344, 362. *S. capensis* n. sp., 70–106 m. off Cape Colony; DOEDERLEIN (78) p. 624, no fig. +*S. delphinus* Deffr., probably *Brissoides*; LAMBERT (173) p. 883. *S. purpureus*; HØRRING (142) p. 189: KEMP (152) pp. 182, 199, 206: NORDGAARD (230) pp. 160, 235: +BASSANI (16): distrib.; DOEDERLEIN (79) p. 383. *S. raschi*, id.; l. c.: KEMP (152) p. 199.
- Sperosoma durum* n. sp., 1644 m. off E. Africa; DOEDERLEIN (78) p. 621, no fig. *S. grimaldii*; SCHMIDT (291) p. 23: distrib.; DOEDERLEIN (79) p. 377.
- Sphaerechinus granularis*, see under II, c, vii & II, F, viii.
- +*Stenaster* n. g. [nom. preocc. E. Billings pro *Ast.*, vide *Purmulochinus*] of *Scutellidae*!, with genotype *S. labriei* n. sp., Stampian of Espiet, Gironde, colln. Lambert, comprises also *Scutella germanica*; LAMBERT (171) p. 140.
- Stereocidaris*:—+*S. hannoverana*, ineasurements; WOLLEMAN (343). *S. ingolfhana*; SCHMIDT (291) p. 23: distrib.; DOEDERLEIN (79) p. 376. +*S. malum*; PAQUIER (238) p. 134.
- +*Stigmatopygus malheiroi*; CHOFFAT (50) p. 59.
- +*Stomechinus*, diagnosis; SAVIN (286) p. 188. *S. bigranularis*; l. c.: THÉVENIN (313) p. 76. *S. denudatus*; SAVIN (286) p. 189. *S. aff. gauthieri*; KILIAN (156) p. 743. *S. gyratus*; MAIRE (206) p. 233. *S. cf. laevis*; KILIAN (156) p. 743. *S. perlatus*; MAIRE (206) p. 233: added notes, LORIOI (195) p. 144.
- +*Striectechinus pouechi* is a *Circopeltis*; LAMBERT (171) p. 136.
- Strongylocentrotus* (vide etiam sub *Paracentrotus*):—*S. droebachiensis*; CLARK (55) p. 7: HØRRING (142) pp. 185, 189: NORDGAARD (230) pp. 160, 235: SCHMIDT (291) pp. 18, 19: SCHMITT (292) p. 247: distrib.; DOEDERLEIN (79) p. 380. *S. franciscanus*; op. cit. p. 382: LOEB (190). *S. gibbosus*; ORTMANN (234) p. 697. *S. lividus*; KEMP (152) p. 182: PIZON (257): RUSSO (283) p. 7, fig.: +CHOFFAT (52)

- p. 749: see also under II, c, vii & II, F, viii. *S. purpuratus*; DORDERLEIN (79) p. 382: see also under II, F, viii.
- +*Tetragramma variolare*; FAVRE (91) p. 99.
- +*Thaagastea*, link betw. *Fibularia* and *Fibulina*; TORNQUIST (316) p. 328.
- +*Thylechinus atacicus*; DONCIEUX (81) p. 102.
- +*Tiaromma*, diagnosis (p. 230), *T. rotulare* (p. 231); SAVIN (286).
- +*Toxaster*, diagnosis; SAVIN (286) p. 122: *T. africanus*; BRIVES (42) pp. 85, 87. *T. amplus*; LAMBERT (170) p. 846. *T. broncoensis*; CHOFFAT (51) p. 29. *T. collegnii* (incl. *T. brunneri*); PANNEKOEK (237) p. 5. *T. complanatus* (= *T. retusus*); SAYN (286A). *T. cf. complanatus*; TOULA (317) p. 341. *T. gibbus*; SAVIN (286) p. 123. *T. granosus* et cf. *granosus*, compared with *T. ricordeanus* (p. 846), *T. lorioli* Lambert not to be separated from *T. ricordeanus* (p. 844, footnote); LAMBERT (170). *T. radula* Gauth., refd. to *Hypaster*; LAMBERT in SAVIN (286) p. 129. *T. retusus*; LAMBERT (170) p. 846; SAVIN (286) p. 123: *T. ribamarensis* n. sp., Urgonian, Barremian, Ribamar, in Ericeira, Portugal; LORIOI (195) p. 138, pl. x: and in CHOFFAT (51) p. 27. *T. ricordeanus* seu *ricordeani*; PERON (248) p. 365; SAYN (287) p. 622: HITZEL (140): cannot be this sp., does author mean *Hemister ricordeus*?; LAMBERT in Review: variations resembling *Mitoxaster collegnoi*; LAMBERT (170) p. 843. *T. cf. ricordeani* [sic]; SAVIN (286) p. 122. *T. subcylindricus*; op. cit. p. 124.
- Toxopneustes lividus*; LOISEL (194): vide etiam sub *Paracentrotus* et *Strongylocentrotus*.
- +*Trachyaster heberti*; CISNEROS (54) p. 529.
- +*Trachypatagus meneghini*; SCHUBERT (293) p. 168.
- +*Trematopygus*, diagnosis; SAVIN (286) p. 156. *T. davidsoni*; DAVEY (66) p. 34. *T. grassatus* d'Orb., made *Clitopygus grasi*; SAVIN (286) p. 158. *T. lorioli* n. sp., Upper Aptian, La Fa, Indre; LAMBERT & SAVIN (286) p. 157, pl. i.
- +*Triplucidius vululi* n. sp., Eocene, La Antigua Ciudad de Jempu, Catalonia; LORIOI (195) p. 122, pl. viii.
- Tripylus*, vide sub *Linthia*.
- +*Trochiliara*, diagnosis (p. 234), *T. depressum* (p. 235); SAVIN (286).
- Tromikowius koehleri*; DORDERLEIN (79) p. 377.
- +*Tylocularia*, diagnosis; SAVIN (286) p. 239. *T. sorigneti*; l. c.: HITZEL (140).
- +*Typocularia*, diagnosis, and *T. nutum*, incl. radioles known as *Cidaris heterocanthus* (p. 272), *T. marginatus* (p. 275); SAVIN (286). *T. vesiculosa*; HITZEL (140).
- Urechinus drygalskii* n. sp., near Antarctic Continent, 3423 m. (p. 241, no fig.), *U. narraianus*, S. of Iceland (p. 243); MORTENSEN (220).
- +*Zeuglopleurus pusillus*; WÄGNER (233) pp. 126, 149.

D.—ASTEROIDEA.

- Acanthaster echinites*; LUDWIG (197) p. 215.
- Albatrossia* n. g. of *Porcellanasteridae* [nom. preocc. Jordan & Evermann, 1894, pro *Pisibius*] with genotype *A. semimarginatus* n. sp., Cook Id., 1498-2149 m.; LUDWIG (197) p. 97, pl. vi.
- Alecanaster* n. g. of *Echinasteridae*, with genotype *A. mirus* n. sp., G. of Panama, Galapagos, 702-537 m.; LUDWIG (197) p. 210, pls. iv, xiii, xiiii.
- Archaster typicus*, young; LUDWIG (197) p. 53, pl. xii.
- +*Archaster diomi*; SPENCER 205, pl. xviii.
- +*Asterocanthion lincki*, determined by A. E. VERRILL; BEANS (207) pp. 368, 370, fig. 302: vide etiam sub *Asterias*.

- Asterias aurantiaca*; COLGAN (61) p. 212: vide etiam sub *Astropecten*.
A. austera; CLARK (55) p. 3. *A. brandti*; HODGSON (141). *A. calamaria* (p. 251), *A. capensis* (p. 252); BELL (26). *A. forbesi*; CLARK (55) p. 4. *A. glacialis*; BELL (26) p. 252: KEMP (152) p. 179: NOBRE (228) p. 82 and (229) p. 133: NORDGAARD (230) p. 160: PIETSCHMANN (256): see also II, c, vii. †*A. impressas*; HUCKE (143) p. 166 and fig. †*A. jurensis*; AEBERHARDT (1) p. 442. *A. linchi*; NORDGAARD (230) p. 160: vide etiam sub *Asteracanthion*. *A. littoralis*; CLARK (55) p. 4. *A. muelleri*; NORDGAARD (230) pp. 160, 235: SCHMIDT (291) p. 18. *A. rubens*; BOLAU (36): HÖRRING (142) pp. 185, 188: KEMP (152) pp. 180, 192: NOBRE (228) p. 82: NORDGAARD (230) pp. 160, 232, 235: PETERSEN (253): vide etiam sub *Uraster*. †*A. stellionura*, determined by A. E. VERRILL; SEARS (297) pp. 369, 370. *A. tenera*; CLARK (55) p. 4. *A. volsellata*; BELL (26) p. 252. *A. vulgaris*; CLARK (55) p. 4: GARREY (108): SCHMITT (292) p. 246.
- Asterina cepheus* juv.; LUDWIG (197) p. 157. *A. coccinea*; BELL (26) p. 248. *A. fimbriata*, distrib., young; LUDWIG (199) p. 59, pls. v, vi. *A. gibbosa*; KEMP (152) p. 179: NOBRE (228) p. 82, & (229) p. 133.
- Asterodon grayi*, vide *Odontaster penicillatus*. *A. pedicellaris*, vide *Odontaster grayi*. *A. singularis*; LUDWIG (199) p. 40, pl. v.
- Astrogonium* Perrier non Müller & Troschel, syn. of *Pararchaster*; FISHER (92) p. 303. *A. boreale* Barrett, vide *Pentagonaster*.
- Astropectinidae* n. g., see *Paraastropecten*.
- Astropecten* rediagnosed; SPENCER (305) p. 90. †*A. sp.*; BENECKE (29) pp. 75, 451: Upper Greensand; SPENCER (305) p. 90, pl. xxv. *A. aurantiacus*; PIETSCHMANN (256): vide etiam sub *Asterias*. *A. benthophilus* n. sp., Cocos Id., 1408 m.; LUDWIG (197) p. 69, pl. iv. *A. capensis*; BELL (26) p. 244. *A. exiguus* n. sp., G. of Panama, 232-2136? m.; LUDWIG (197) p. 72, pls. iv, xxii. *A. irregularis*; KEMP (152) pp. 179, 188, 205: NOBRE (229) p. 132: NORDGAARD (230) p. 160. *A. muelleri*; SCHMIDT (291) p. 21. *A. pentacanthus*; PIETSCHMANN (256). *A. polyacanthus*; LUDWIG (197) p. 76. *A. pontoporeus*; BELL (26) p. 243. *A. subinermis*; NOBRE (229) p. 133. *A. sulcatus* n. sp., C. San Francisco and Cocos Id., 95-121 m.; LUDWIG (197) p. 64, pl. iv. †*A. wilckensis* [sic] n. sp., Cretaceous, Cerro Cazador, Patagonia; LORIOI (195) p. 141, pl. x.
- Bathylaster pallidus*; SCHMIDT (291) p. 20. *B. pectinatus* n. sp., off San Diego, Cal., 1,059 fm.; FISHER (92) p. 295, no fig.
- Benthopecten ucanthonotus* n. sp., off San Diego, Cal., 1059 fm.; FISHER (92) p. 299, no fig.
- Briangou* sp.; KEMP (152) p. 192. *B. coronata*; l. c. and p. 205: NORDGAARD (230) pp. 160, 241. *B. endecacnemus*; KEMP (152) p. 192. *B. exilis* n. sp., off San Diego, Cal., 620 fm.; FISHER (92) p. 318, no fig. *B. panamensis* n. sp., Cocos Id., Galapagos, G. of Panama, G. of California, 1820-2418 m. (p. 258, pls. xxviii, xxxii). *B. tenella* n. sp., Galapagos, 2418 m. (p. 255). *B. variispina* n. sp., Paumotu Is., 1470 m. (p. 249); LUDWIG (197).
- Calliaster baccatus*; BELL (26) p. 247.
- †*Calliderna mosaicum*; SPENCER (305) pl. xxvi.
- Cheiraster agassizii* n. sp., G. of Panama, Galapagos Is., and G. of California, 1271-2323 m.; LUDWIG (197) p. 1, pls. i, ii, xvi.
- †*Comptonia* rediagnosed and *C. comptoni*, redescri. (p. 69, pls. xvii, xviii). *C. elegans*, redescri. from neotype (p. 71, pl. xvii); SPENCER (305).
- Cosmasterius lurida*, distrib.; LUDWIG (199) p. 69.
- Cribrella gracilis* n. sp., Tres Marias Id., C. Corrientes Mexico, and Galapagos, 267-1244 m.; LUDWIG (197) p. 204, pls. xiii, xxx, xxxi.

- C. pagenstecheri*, distrib., notes; LUDWIG (199) p. 68. *C. pectinata*; CLARK (55) p. 3. *C. nana* n. sp., Galapagos, 97 m.; LUDWIG (197) p. 207, pls. xiii, xxxi. *C. sanguinolenta*; CLARK (55) p. 3: HØRRING (142) pp. 185, 188: NORDGAARD (230) p. 160: SCHMIDT (291) pp. 19, 20: vide etiam sub *Henricia*.
- Crossaster papposus*; CLARK (55) p. 2: SCHMITT (292) p. 246: vide etiam sub *Solaster*.
- Cryptopeltaster* n. g. of *Goniasteridae Hippasteriinae*, with genotype *C. lepidonotus* n. sp., off Sta. Cruz Id. Cal., 197-284 fm.; FISHER (92) p. 311, no fig.
- Utenodiscus crispatus*; CLARK (55) p. 1: NORDGAARD (230) pp. 160, 235, 241: SCHMIDT (291) pp. 18, 19: incl. *C. procurator* Slad. and *C. corniculatus* Michailovskij, distinct fr. *C. australis*; LUDWIG (197) p. 164, pl. vi.
- Culcita novae-guineae*; LUDWIG (197) p. 156. *C. veneris*; BELL (26) p. 248.
- Cycethra verrucosa*; HODGSON (141): incl. *C. nitida*, *C. simplex*, resemblance of young to *Asterina*; LUDWIG (199) p. 53, pl. vi.
- Dipsacaster erimius* n. sp., Los Coronados Is., S.W. Cal., 525 fm.; FISHER (92) p. 296, no fig.: *D. sladeni*, parasitic cirripede; LE ROI (182).
- Dytaster demonstrans* n. sp., G. of Panama, 2418-4082 m.; LUDWIG (197) p. 41, pls. v, xviii, xix, xx. *D. gilberti* n. sp., off San Diego, Cal., 2196-2228 fm.; FISHER (92) p. 300, no fig.
- Echinaster* sp.; BELL (26) p. 252. *E. fallax*, parasitic cirripede; LE ROI (182).
- Echinasteridae* n. g. see *Alexandraster*.
- Eremicaster* n. s.-g. of *Porcellanaster*, with genotype *P. tenebrarius* (q.v.); FISHER (92) p. 293.
- Freyella* sp. nondescr. aff. *F. elegans*; SCHMIDT (291) p. 24. *F. fecunda* n. sp., Monterey Bay, Cal., 958 fm.; FISHER (92) p. 319, no fig. *F. insignis* n. sp., G. of Panama, Acapulco, 3182-3436 m. (p. 272, pl. xxxii). *F. pacifica* n. sp., Paumotu Is., 1485 m. (p. 267). *F. propinqua* n. sp., G. of Panama, 2877 m. (p. 280); LUDWIG (197).
- Ganeridae*, i.e. *Ganeria*, *Cycethra*, *Lebrunaster*, *Radiaster*, not to be separated from *Asterinidae*; LUDWIG (199) p. 59.
- Gnathaster pilulatus*, vide *Odontaster penicillatus*.
- Goniaster acutus* Heller; GRIEG (121) p. 3. *G. nidarosiensis*, vide *Peltaster*. *G. phrygianus*; SCHMIDT (291) p. 21. *G. placentaeformis* Heller; GRIEG (121) p. 3.
- Goniasteridae* n. g. *Cryptopeltaster* (q.v.); FISHER (92).
- Gymnasteria carinifera*, added notes; LUDWIG (197) p. 156, pl. xii.
- Henricia ornata* incl. *H. simplex* (Slad.); BELL (26) p. 250. *H. sanguinolenta*; KEMP (152) pp. 179, 191, 205: NOBRE (229) p. 133: vide etiam sub *Cribrella*.
- Hippasteria* (seu -ias) *californica* n. sp., off Sta. Cruz Id., Cal., 506-680 fm. (p. 310, no fig.). *H. heathi* n. sp., Clarence Str., Alaska, 206-248 fm. (p. 309, no fig.); FISHER (92). *H. pacifica* n. sp., Las Tres Marias Id., 1244 m.; LUDWIG (197) p. 138, pls. xii, xxiii. *H. phrygiana*; CLARK (55) p. 1: GRIEG (121) p. 4: NORDGAARD (230) pp. 160, 235.
- Hydrasterius* (?) sp., arms of an undescribed sp., Galapagos (p. 246, pl. xxxv). *H. diomedea* n. sp., G. of Panama, Cocos Id., 121-155 m. (p. 242, pls. xxxiv, xxxv); LUDWIG (197).
- Hymenaster* sp.; BELL (26) p. 250: LUDWIG (197) p. 202. *H. gracilis* n. sp., G. of Panama, Galapagos, 2418-3241 m.; op. cit. p. 198, pls. xv, xxxv. *H. pellucidus*; SCHMIDT (291) p. 20. *H. platycanthus* n. sp., Galapagos, G. of Panama, 2487-2877 m. (p. 191, pl. xxxv). *H. purpureus* n. sp., G. of Panama, 2690 m. (p. 194); LUDWIG (197). *H. quidrispinosus* n. sp., off San Diego, Cal., 1059 fm.; FISHER (92).

- p. 315, no fig. *H. violaceus* n. sp., Acapulco, 3436 m.; LUDWIG (197) p. 196.
- Hyphalaster moseri* n. sp., N. of Marquesas, 4504 m.; LUDWIG (197) p. 100, pl. vii.
- Isaster* Verrill, perhaps to be used for s.-g. of *Mediaster*; FISHER (92) p. 308.
- Labidiaster radionus*, distrib., arm-skeleton; LUDWIG (199) p. 71.
- Leptoptychaster arcticus*; NORDGAARD (230) p. 160. *L. kerguelensis*; BELL (26) p. 242.
- Linckia miliaris* (p. 157), *L. multifora* & *L. pacifica* var. *diplax* (p. 158); LUDWIG (197).
- Lophaster furcilliger* n. sp., between Sta. Barbara & San Nicholas Is., Cal., 1084-1100 fm.; FISHER (92) p. 312, no fig.
- Luidia africana*; BELL (26) p. 245. *L. armata* n. sp., Cocos Id. & G. of Panama, 95-155 m.; LUDWIG (197) p. 85. *L. ciliaris*; KEMP (152) p. 189. *L. ferruginea* n. sp., G. of Panama, 280 m.; LUDWIG (197) p. 80. *L. sarsi*; KEMP (152) pp. 189, 205.
- Mediaster* referred to *Pentagonasteridae* (p. 106), *M. elegans* n. sp., Cocos Id., 1789 m. (p. 125, pls. ix, xxiv): n. var. *abyssi*, Malpelo Id., 3334 m. (p. 128); LUDWIG (197). *M. tenellus* n. sp., off Sta. Cruz Id., Cal., 376-510 fm., perhaps in s.-g. *Isaster*; FISHER (92) p. 307, no fig. *M. transfuga* n. sp., Acapulco, 902 m.; LUDWIG (197) p. 120, pls. viii, xxii, xxv.
- + *Metopaster*:—*M. mantelli*; SPENCER (305) pl. xvii. *M. parkinsoni*; op. cit. pl. xix: WHITE (338) pp. 472, 487.
- Mimaster swifti* n. sp., Stephen's Passage, Alaska, 131-188 fm.; FISHER (92) p. 301, no fig. *M. tizardi*; SCHMIDT (291) p. 22.
- Mithrodia clavigera*, anat. notes; LUDWIG (197) p. 215.
- + *Mitraster compactus*, redescr.; SPENCER (305) p. 67, pls. xvii, xxvi.
- Myxoderma* n. s.-g. of *Zoroaster*, with genotype *Z. sacculatus* (q.v.); FISHER (92) p. 316.
- Neomorphaster talismani*, 5413 m.; RICHARD (276) p. 3: ALBERT (9).
- Nymphaster* referred to *Pentagonasteridae*; LUDWIG (197) p. 106. + *N. coombii*; SPENCER (305) pl. xix. *N. diomedea* n. sp., Galapagos, Cocos Id., Mariato Pt., 702-1618 m.; LUDWIG (197) p. 128, pls. x, xi. + *N. radiatus* n. sp., Lower Chalk, England; SPENCER (305) p. 73, pl. xxv. *N. subspinosus*; KEMP (152) p. 189.
- Odontaster*, connotation discussed; LUDWIG (199) p. 42. *O. crassus* n. sp., off San Diego, Cal., 92 fm.; FISHER (92) p. 302, no fig. *O. grayi* (Bell) incl. *Pentagonaster puzillozus* Bell, *Asterodon pedicellaris* Perr., distrib., young; LUDWIG (199) pp. 42, 48, pl. v. *O. meridionalis*, vide *O. penicillatus*. *O. penicillatus* incl. *Gnathaster pilulatus* Slad., *Asterodon grayi* Perr., *Odontaster meridionalis* Leip., distrib., young; LUDWIG (199) pp. 42, 46, pl. v.
- Ophidiaster cylindricus*; LUDWIG (197) p. 158.
- Oreaster*, vide *Pentaceros*. + *O. bulbiferus*; WHITE (338) p. 476.
- Palmipes membrinaceus*; PIETSCHMANN (256). *P. novemradiatus* n. sp., holotype from C. Natal, 48 fm., 3 paratypes other locc.; BELL (26) p. 248. *P. placentu*; KEMP (152) p. 190.
- Parurchaster cognatus* n. sp., 3058 m., G. of Panama; LUDWIG (197) p. 21, pl. xix. *P. sp.* nondescr. aff. *P. fischeri*; SCHMIDT (291) p. 24.
- P. pectinifer* n. sp., 1618 m., Galapagos Is. (p. 10) young (p. 16) (pls. i, xvi, xvii, xviii), *P. spinuliger* n. sp., 1618-2323 m., G. of Panama, Cocos & Galapagos Is. (p. 23, pl. xix); LUDWIG (197).
- Parastropecten* n. g. of *Astropectinidae* with genotype *P. inermis* n. sp., G. of Panama & Cocos Id., 1271-1408 m.; LUDWIG (197) p. 76, pls. iv, xxi, xxii.
- Paulia horrida* redescr., with n. var. *galapagensis*; LUDWIG (197) p. 143, pls. xiii, xxiv, xxv.

- Pauliella* n. g. of *Pentacerotidae* with genotype *P. aenigma* n. sp., Cocos Id., 121 m., perhaps is young of *Paulia horrida*; LUDWIG (197) p. 151, pls. xii, xxi, xxiv, xxv, xxvi.
- Pedicellaster improvisus* n. sp., Galapagos & Cocos Id., 1618-2419 m.; LUDWIG (197) p. 216, pl. xxiv. *P. typicus*; NORDGAARD (230) p. 160.
- Peltaster hebes* Verrill is syn. of *P. nidarosiensis* (Storm sub *Goniaster*) redescr. and figd., which thus becomes genotype; GRIEG (121) p. 5.
- +*Pentaceros* rediagnosed, incl. *Oreaster* (q.v.) (p. 76), *P. sp.*, Chalk (p. 89, pl. xxv), *P. abbreviatus* n. sp., Upper Chalk, Charlton, Kent (p. 86, pl. xxiv), *P. bispinosus* n. sp., Upper Chalk, Sittingbourne, Kent (p. 87, pl. xxiii), *P. boysii*, redescr., probably incl. *P. senonensis*, Valette (p. 80, pls. xxii, xxiii, xxvi), *P. bulbiferus*, redescr. (p. 77, pls. xx, xxi, xxiii), *P. coronatus*, redescr. (p. 82, pls. xix, xxiv, xxv), *P. ocellatus*, redescr. (p. 85, pl. xiv), *P. pistilliferus*, discussed (p. 88, pl. xxv), *P. punctatus* n. sp., Upper Chalk, England (p. 88, pl. xxvi), *P. squamatus*, redescr. (p. 83, pl. xxv); SPENCER (305).
- Pentacerotidae* n. g. see *Pauliella*.
- Pentagonaster* :- +*P. browni* n. sp., Cretaceous, Fox Hills Sandstone, near Lander, Wyoming; WELLER (334) text-figg. *P. ernesti* n. sp., Cocos Id., 2149 m. leads to *Nymphaster*; LUDWIG (197) p. 136, pl. x. *P. granularis*; KEMP (152) p. 189; NORDGAARD (230) p. 160: incl. *Astrogonium boreale* Barrett, measurements, variations, pedicellariae, spines; GRIEG (122). +*P. megaloplas*; WHITE (338) pp. 470, 472, 476. *P. nidarosiensis*; SCHMIDT (291) p. 22: vide etiam sub *Peltaster*. +*P. obtusus*, redescr.; SPENCER (305) p. 74, pl. xxii. *P. parvillus*, vide *Odontaster grayi*. *P. placenta*; GRIEG (121) p. 4. +*P. robustus* n. sp., Upper Chalk, Sussex; SPENCER (305) p. 73, pl. xxi. *P. tuberculatus*; BELL (26) p. 246.
- Peribolaster biserialis* n. sp., between Sta. Catalina and Sta. Barbara Is., Cal., 178-195 fm.; FISHER (92) p. 313, no fig.
- Perknaster* "only an aberrant *Echinaster*"; BELL (26) p. 253.
- Persephonaster armiger* n. sp., E. of Cocos Id., 1951 m.; LUDWIG (197) p. 36, no fig. *P. penicillatus* n. sp., off Los Coronados Is. S.W. Cal. 530-638 fm.; FISHER (92) p. 297, no fig.
- Plutonaster abyssicola* n. sp., G. of Panama, 1865-3068 m.; LUDWIG (197) p. 30, pls. iii, xix. *P. bifrons*; KEMP (152) p. 188. *P. pareli*; l. c. & pp. 183, 205; NORDGAARD (230) p. 160.
- Pontaster*, syn. of *Cheiraster*; LUDWIG (197) pp. 1, 8. *P. tenuispinis*; KEMP (152) pp. 187, 205; NORDGAARD (230) p. 160; SCHMIDT (291) p. 20.
- Porania antarctica*; LUDWIG (199) p. 51, pl. vi. *P. pulvillus*; KEMP; (152) p. 189.
- Poraniomorpha rocea* [sic]; NORDGAARD (230) p. 160.
- Porcellanaster pacificus* n. sp., G. of Panama, Cocos Id., Acapulco, Malpelo Id., 2070-3436 m.; LUDWIG (197) p. 89, pl. vi. *P. (Eremicaster) tenebrarius* n. sp., 200 miles off San Diego, Cal., 2196-2228 fm.; FISHER (92) p. 293, no fig. *P. waltharii* n. sp., G. of Panama, Galapagos and Acapulco, 2418-4062 m.; LUDWIG (197) p. 92, pl. v.
- Porcellanasteridae* n.g., see *Albatrossia*. n. s.-g. of *Porcellanaster*, see *Eremicaster*.
- Pseudarchaster* referred to *Pentagonasteridae*; LUDWIG (197) p. 106. *P. alascensis* n. sp., near Yes Bay, Behm Canal, Alaska, 147-205 fm.; FISHER (92) p. 303, no fig. *P. mosaicus* (p. 110), *P. pectinifer* n. sp., G. of Panama, 1865 m. (p. 106, p. vii), *P. pulcher* n. sp., Galapagos and Acapulco, 702-1618 m. (p. 110, pls. viii, xxii); LUDWIG (197). *P. puillus* n. sp., between Sta. Barbara and San Nicholas Is., Cal., 216-339 fm.; FISHER (92) p. 304, no fig. *P. tessellatus*; BELL (26) p. 242. *P. verrilli* n. sp., G. of Panama, 998 m.; LUDWIG (197) p. 116, pls. vii, xxiii.

- Psilaster acuminatus*; BELL (26) p. 245. *P. andromeda*; KEMP (152) p. 188: NORDGAARD (230) pp. 160, 235, 241. *P. armatus* n. sp., S. of Las Tres Marias Id., 1236 m. (p. 59, pls. xxi, xxii), *P. sladeni* n. sp., Galapagos Is., 1618 m. (p. 57, no fig.); LUDWIG (197).
- Pteraster* sp. non descr. aff. *P. caribaeus*; SCHMIDT (291) p. 24. *P. jordani* n. sp., off San Diego, Cal., 642–650 fm.; FISHER (92) p. 314, no fig. *P. militaris*; CLARK (55) p. 2: NORDGAARD (230) pp. 160, 240. *P. pulvillus*; CLARK (55) p. 2: NORDGAARD (230) p. 160.
- Retaster capensis*; BELL (26) p. 250. *R. diaphanus* n. sp., Cocos Id., 1408 m.; LUDWIG (197) p. 202. *R. gibber*, added notes and corrections; LUDWIG (199) p. 65, pl. vi. *R. multipes*; SCHMIDT (291) p. 22.
- Sarkaster* n. g. of *Solasteridae*, with genotype *S. validus* n. sp., G. of Panama, Galapagos, Tres Marias Id., 523–1244 m.; LUDWIG (197) p. 185, pls. xv, xxix, xxx.
- Solaster affinis*; KEMP (152) pp. 183, 191. *S. australis* (Perr. sub *Crossaster*), small individual; LUDWIG (199) p. 63. *S. sp.* non descr. aff. *S. earlii*; SCHMIDT (291) p. 22. *S. endeca*; CLARK (55) p. 1: HÖRRING (142) p. 188: NORDGAARD (230) p. 160: SCHMITT (292) p. 246. *S. glacialis* Dan. & Kor., incl. *S. echinatus* Storm & *S. syrtensis* Verrill; GRIEG (122) p. 4. *S. papposa*; COLGAN (61) p. 212: NORDGAARD (230) pp. 160, 235: SCHMIDT (291) p. 20. *S. penicillatus*; BELL (26) p. 249. *S. syrtensis*; NORDGAARD (230) pp. 160, 235.
- Solasteridae*, n. g. see *Sarkaster*.
- Sporasterias antarctica*, distrib.; LUDWIG (199) p. 70. *S. cocosana* n. sp., Cocos Id., 245 m. (p. 235, pls. xxxiii, xxxiv), *S. galapagensis* n. sp., S. of Chatham Id., 704 m. (p. 240, pl. xxxiv), *S. mariana* n. sp., Las Tres Marias Id., 1244 m. (p. 231, pl. xxxiii); LUDWIG (197).
- †*Stellaster coombii*, distinction from *Asterias quinqueloba*; WEGNER (333) pp. 123, 149.
- Stichaster albulus*; CLARK (55) p. 3. *S. felipes*; BELL (26) p. 249. *S. roseus*; NORDGAARD (230) p. 160: KEMP (152) pp. 180, 205.
- Stolasterias alexandri* n. sp., G. of Panama, 95–384 m. (p. 221, pl. xxxii), *S. robusta* n. sp., Galapagos, 704 m. (p. 228); LUDWIG (197).
- Tosia leptocera* n. sp., off Point Loma, near San Diego, Cal., 376–594 fm.; FISHER (92) p. 306, no fig.
- Uraster rubens*; COLGAN (61) p. 212: vide etiam sub *Asterias*.
- Zoroaster* sp. juv., G. of Panama; LUDWIG (197) p. 177, pl. xxvii. *Z. (Myxoderma) evermanni* n. sp., between San Diego and San Clemente Is., Cal., 500–507 fm.; FISHER (92) p. 317, no fig. *Z. fulgens*; SCHMIDT (291) p. 22. *Z. hirsutus* n. sp., Acapulco, 3436 m. (p. 172, pls. xxviii, xxix). *Z. longispinus* n. sp., G. of California, Galapagos, G. of Panama, 1430–2418 m. (p. 180, pls. xiv, xxix), *Z. magnificus* n. sp., Mariato Pt., 3058 m. (p. 159, pls. xxvi, xxvii), *Z. nudus* n. sp., G. of California, 1820–2599 m. (p. 164, pls. xiv, xxvii, xxviii); LUDWIG (197). *Z. ophiurus* n. sp., off San Diego, Cal., 1059 fm. (p. 315, no fig.), *Z. (Myxoderma) sacculatus* n. sp., Monterey Bay, Cal., 916 fm. (p. 316, no fig.); FISHER (92).
- Zoroasteridae*, n. s.-g. *Myxoderma* (q. v.); FISHER (92).

(E.)—OPHIUROIDEA.

- Amphilepis norvegica*; NORDGAARD (230) pp. 159, 241. *A. sp.* non descr. aff. *A. norvegica*; SCHMIDT (291) p. 23.
- Amphiodia*, vide sub *Amphiura*.
- Amphioplus* (vide etiam sub *Amphiura*):—*A. abdita*; CLARK (55) p. 6.
- Amphipholis squamata*; CLARK (55) p. 6.

- Amphiura abbreviata* n. sp., Banda, Sulu, and Java Seas, 13-33 m. (p. 34, pl. iv), *A. ambigua* n. sp., Sulu Archipel., 13 m. (p. 39, pl. iv), *A. (Amphioplus) capax* n. sp., Banda Sea, 18 m., young (p. 50, pl. vi), *A. (Amphioplus) caudata* n. sp., Borneo Bank and Gilolo Passage, 59-83 m. (p. 49, pl. v), *A. celata* n. sp., Amboina reefs (p. 35, pl. iv), *A. (Amphioplus) cesarea* n. sp., Banda and Java Seas, 27-91 m. (p. 44, pl. v), *A. coacta* n. sp., off Kei Is., Banda Sea, 22 m. (p. 33, pl. iv), *A. (Amphioplus) condita* n. sp., Pulu Kaniungan Ketjil [Siboga Stat. 89], 11 m. (p. 46, pl. v), *A. depressa*, note on holotype (p. 46), *A. duncani* (p. 33); KOEHLER (160). *A. elegans*; KEMP (152) pp. 181, 195; NOBRE (229) p. 133. *A. (Amphioplus) exsecrata* n. sp., Amboina reefs; KOEHLER (160) p. 48, pl. iii. *A. filiformis*; HERRING (142) p. 189; KEMP (152) pp. 181, 195. *A. (Amphioplus) formata* n. sp., Lesser Sunda Is. (p. 51, pls. v, xvi), *A. hastata*, redescrip. (p. 42, pl. v); KOEHLER (160). *A. incana*?; BELL (25) p. 258. *A. instans* n. sp., Banda Sea, 57 m. (p. 38, pl. iii), *A. (Amphioplus) intermedia* n. sp., off E. Java and E. Borneo, 9-59 m. (p. 42, pl. iv), *A. laevis* (p. 41); KOEHLER (160). *A. magellanica*; LUDWIG (199) p. 75. *A. morosa* n. sp., Gilolo Passage, 18 m.; KOEHLER (160) p. 37, pl. iii. *A. patagonica*, viviparous; LUDWIG (199) p. 75. *A. perita* n. sp., Solor Str. E. of Flores, 113 m. (p. 36, pl. iii), *A. (Amphioplus) personata* n. sp., W. Flores (p. 47, pl. v), *A. (Amphioplus) praestans* n. sp., var. locc., Malay Archipel., 32-51 m. (p. 45, pl. iv), *A. (Amphioplus) reflecta* n. sp., Sula Besi, 22 m. (p. 52, pl. vi), *A. relictata* (p. 41), note on cotypes (p. 46), *A. (Amphiodia) reposita* n. sp., Pulu Kaniungan Ketjil [Siboga Stat. 89], 11 m. (p. 40, pl. iv); KOEHLER (160). *A. squamata*; BATHER (21) p. 165; PUETTER (263) p. 23. *A. tenuispina*; SCHMIDT (291) p. 23.
- Astrochalcis* n. g. of *Euryalidae* (p. 129), with genotype *A. tuberculosus* n. sp., var. locc., Malay Archipel., 13-73 m. (p. 130, pl. xvi); KOEHLER (160).
- Astrophyton agassini*; SCHMITT (292) p. 247. *A. cornutum* (Koehl. sub *Gorgonocephalus*) adult descr. (p. 127, pls. xiii, xviii), *A. elegans* n. sp., Solor Str. E. of Flores, 113 m. (p. 123, pls. xiii, xviii), *A. gracile* n. sp., Lesser Sunda Is., 73 m. (p. 125, pl. xvii); KOEHLER (160).
- Astro[s]chema rousseaui*; KOEHLER (160) p. 123.
- †*Bundenbachia*; BATHER (21) p. 164.
- Euryale studeri*, incl. "*E. aspera*" Koehl. of Investigator; KOEHLER (160) p. 132.
- Euryalidae*, n. g. see *Astrochalcis*.
- Gorgonocephalus agassini*; CLARK (55) p. 7. *G. eucnemis*; SCHMIDT (291) p. 20. *G. lamarecki*; NORDGAARD (230) p. 160. *G. pourtalesi* (p. 259), *G. verrucosus* (p. 260); BELL (25).
- †*Lapworthuridae*, n. g. vide *Sympterura*.
- Ophiacanthu abyssiicola*; KEMP (152) pp. 195, 183; NORDGAARD (230) p. 159. *O. audas* n. sp., Java Sea, 69 m.; KOEHLER (160) p. 57, pl. vii. *O. bidentata*; CLARK (55) p. 7; NORDGAARD (230) p. 159; SCHMIDT (291) p. 24. *O. confusa* n. sp., S. of Philippines, 26 m. (p. 59, pls. vi, vii). *O. dallani* (p. 55); KOEHLER (160). *O. decora*, vide *O. indica*. *O. (Ophiopristis) dissidens* n. sp., Pulu Kaniungan Ketjil [Siboga Stat. 89] 11 m. (p. 56, pl. vii), *O. indica*, incl. *O. decora* Koehl. (p. 56); KOEHLER (160). *O. spectabilis*, distrib., habitat; NORDGAARD (230) pp. 159, 239, 240. *O. spinulosa*; HERRING (142) p. 185; PUETTER (263) p. 23. *O. suspecta* n. sp., Java Sea, 69 m.; KOEHLER (160) p. 58, pl. vii. *O. valenciennesi*; KOEHLER (159).
- Ophiactis abyssiicola*; SCHMIDT (291) pp. 23, 24. *O. affinis* with 5 brachial spines; KOEHLER (160) p. 26. *O. asperula*, distrib.; LUDWIG (199) p. 74. *O. balli*; KEMP (152) pp. 195, 206. *O. conferta* n. sp., Gilolo

- Passage, 18 m. (p. 25, pl. iii), *O. savignyi*, 5 & 6 rays, variations, synonymy discussed, incl. *O. sesradia*, *incisa*, *reinhardti*, *krebsi* (p. 26); KOEHLER (160).
- Ophiarachna incrassata*; KOEHLER (160) p. 64.
- Ophiarthrum elegans* (p. 73), *O. pictum* (p. 72); KOEHLER (160).
- Ophiobyrsa hystrix*; KEMP (152) p. 196.
- Ophiocampis inermis* n. sp., Kei Is. and Banda, 9-36 m.; KOEHLER (160) p. 115, pl. xiii.
- Ophiochiton ternispinis*, not British; KEMP (152) p. 194.
- Ophiocnemis marmorata*; KOEHLER (160) p. 112.
- Ophiocnida aspera* n. sp., Borneo Bank and S. of Philippines, 34 m.; KOEHLER (160) p. 29, pl. ii. *O. brachiata*; KEMP (152) p. 180. *O. dilatata* n. sp., Sulu Archipel. and Banda Sea, 12-45 m. (p. 30, pl. xii), *O. echinata*, added notes, autotomy of disc (p. 32), *O. sesradia* belongs to section *Amphilimna* Verrill (p. 33), *O. verticillata*, variations from type, differences from *O. putmanni* [*putnami*] Lym. (p. 29, pl. ii); KOEHLER (160).
- Ophiocoma brevipes* (p. 61), *O. doederleini* (p. 60), *O. lineolata* (p. 62); KOEHLER (160). *O. nigra*; KEMP (152) pp. 181, 195. *O. rosula*; COLGAN (61) p. 212. *O. scolopendrina* et var. *erinaceus* (p. 60), *O. vendtii*, redescr. (p. 63, pl. xiv); KOEHLER (160).
- Ophiocotis cincta*, variation from type, structure of teeth (p. 14, pl. ii), *O. cupida* n. sp., var. locc. Sulu Archipel., 13-45 m. (p. 15, pl. i), *O. permixta* n. sp., Buton Str. S. of Celebes, and Kei Is. Banda Sea, 75-94 m. (p. 14, pl. ii); KOEHLER (160).
- Ophiocten sericeum*; NORDGAARD (230) p. 159: SCHMIDT (291) pp. 20, 23, 24.
- Ophiodera compacta* n. sp., Pulu Kaniungan Ketjil [Siboga Stat. 89], 11 m.; KOEHLER (160) p. 120, pl. xiv.
- Ophioderma longicauda*; BAGLIONI (12c): NOBRE (229) p. 134. *O. vahlbergi*, distrib.; BELL (25) p. 255.
- Ophioglypha* (vide etiam sub *Ophiura*):—*O. affinis*; CLARK (55) p. 5. *O. albida*; HÖRRING (142) pp. 185, 186, 188. *O. bullata*, *O. clemens*, and *O. flagellata*; KOEHLER (159). *O. forbesi*, variations from type, relations to *Ophiomusium*; KOEHLER (160) p. 22. *O. inornata*; KOEHLER (159). *O. kinbergi*, incl. *O. sinensis*, variations, holotype descr.; KOEHLER (160) p. 22. *O. lacertosa*; ZELENY (349 & 350).
- O. lepidia* var. *saurura*; SCHMIDT (291) p. 24. *O. lymani*, variations in radial shields, &c.; LUDWIG (199) p. 73. *O. robusta*; CLARK (55) p. 5. *O. sarsi*; op. cit. p. 6: SCHMIDT (291) p. 18: +NORDMANN (231). *O. scabra* n. sp., Kei Is. in Banda Sea, 90 m. (p. 20, pl. ii), *O. sculpta* (p. 22), *O. stellata* (p. 21); KOEHLER (160). *O. texturata*; HÖRRING (142), pp. 185, 188. *O. tumulosa*; LUDWIG (198).
- Ophioglyptis* n. g. of *Ophiomyridae*, with genotype *O. nodosa* n. sp., Banda Sea, E. of Flores, and Lesser Sunda Is., 73-113 m.; KOEHLER (160) p. 121, pl. xii. [?err. typ. pro *Ophioglyptis*.]
- Ophiotelepis annulosa* (p. 17), *O. cincta* (p. 16), *O. irregularis*, added notes (p. 17, pl. iii), *O. nodosa* (p. 18), *O. rugosa* (p. 18); KOEHLER (160).
- Ophiomastix annulosa* (p. 65), *O. asperula*, note on cotypes (p. 66, pl. vi), *O. caryophyllata*, variations (p. 67), *O. flaccida* (p. 67), *O. mixta*, redescr. from cotypes and others (p. 68, pls. vi, xv), *O. ornata* n. sp., Borneo Bank, 34 m. (p. 71, pl. vi), *O. pusilla*, with young stage (p. 65, pls. vi, xiii), *O. variabilis* n. sp., Timor, Sulu Archipel., and Java Sea, 12-32 m. (p. 69, pls. vi, xvi); KOEHLER (160).
- Ophiomaza caucotica*, colour; KOEHLER (160) p. 111.
- Ophiomusium lymani*, locality discussed; KEMP (152) p. 194: SCHMIDT (291) p. 24.
- Ophiomyxa brevisipina*, notes, and *O. irregularis* n. sp., based on *O.*

- brevispina* var. *irregularis* Koehl., 1898; KOEHLER (160) p. 119, pl. xii.
O. vivipara; LUDWIG (199) p. 76.
- Ophiomyzidae* n. g., see *Ophiogypsis*.
- Ophioneis porrecta*, young (p. 53), *O. semoni* (Doed. sub *Ophiotriton*) (p. 54, pls. vi, xiv), *O. sophiae*, note on a cotype (p. 54, pl. vi); KOEHLER (160).
- Ophionotus victorias*; HODGSON (141).
- Ophiopiza aster*, variations from type (p. 13), *O. conjungens*, differences of age (p. 12), *O. exilis* n. sp., Flores and Banda Seas, Gilolo Passage, 83-400 m. (p. 12, pl. ii); KOEHLER (160).
- Ophiopozella luetkeni*; KOEHLER (160) p. 13.
- Ophiopholis aculeata*; CLARK (55) p. 6: HØRRING (142) pp. 185, 186, 188, 193: KEMP (152) pp. 195, 205: NORDGAARD (230) p. 159: SCHMIDT (291): SCHMITT (292) p. 246. *O. bellis*; GRIFFITHS (123).
- Ophiopleura borealis*; SCHMIDT (291) p. 20.
- Ophioplocus imbricatus*; KOEHLER (160) p. 18.
- Ophiopristis*, vide sub *Ophiacantha*.
- Ophiopammium rugosum* n. sp., Aru Is. and Red Sea, 13 m. (p. 116, pl. xiii), *O. semperi*, colour (p. 116); KOEHLER (160).
- Ophiopsila annulosa*, distinguished from *O. aranea*, found at Galway, Plymouth, Dartmouth; NORMAN (233). *O. pantherina*; KOEHLER (160) p. 53.
- Ophiopteron elegans* (p. 112), *O. puncto-coeruleum* n. sp., Flores, Aru, and Rotti, 13-40 m. (p. 114, pls. xii, xv), *O. sibogae* n. sp., Lesser Sunda Is., 73 m. (p. 113, pl. xii); KOEHLER (160).
- Ophiocollex dentatus*; BELL (25) p. 259. *O. glacialis*; SCHMIDT (291) p. 20: NORDGAARD (230) pp. 159, 240, 241: *O. purpureus*; op. cit. pp. 160, 240.
- Ophiosteira antarctica*; HODGSON (141).
- Ophiostigma formosa*, variations from type, holotype descr., young stage; KOEHLER (160) p. 24, pl. ii.
- Ophiothamnus remotus*; BELL (25) p. 258.
- Ophiothela danae*, incl. *O. indicola*, var. *involuta* given up; KOEHLER (160) p. 117.
- Ophiothrix andersoni*, length of rays, colour; KOEHLER (160) p. 82, pl. xiv.
- O. aristulata*; BELL (25) p. 258. *O. armata* n. sp., Banda (p. 103, pl. x), *O. bedoti* (p. 83), *O. coronata* n. sp., Gilolo Passage, 83 m. (p. 91, pl. ix), *O. demessa*, added notes (p. 91, pl. ix), *O. diligens* (p. 100), *O. exhibitata* n. sp., Lesser Sunda Is., 274 m. (p. 110, pl. x), *O. exigua*, holotype descr., incl. "*O. comata*" Marktanner and de Loriol (p. 86, pl. ix), *O. expedita* n. sp., various locc. Malay Archipel., 12-73 m. (p. 96, pls. ix, xv), *O. foveolata*, incl. *O. insidiosa* Koehl. (p. 76); KOEHLER (160). *O. fragilis*; KEMP (152) pp. 181, 196, 206: NOBRE (228) p. 82: NORDGAARD (230) p. 159. *O. fulgens* n. sp., Banda and Java Seas, 36-90 m. (p. 107, pl. x), *O. galathea* (p. 84), *O. hirsuta*, incl. *O. variabilis* Duncan (pp. 93, 94), *O. infirma* n. sp., Banda and Java Seas, 54-90 m. (p. 89, pl. viii); KOEHLER (160). *O. insidiosa*, vide *O. foveolata*. *O. longipeda* (pp. 92, 94), *O. lorioli*, colour (p. 103); KOEHLER (160). *O. luetkeni*; KEMP (152) p. 196. *O. marginata* n. sp., Aru Is., Banda Sea, 13 m. (p. 79, pl. viii), *O. martensi* (p. 80), *O. melanosticta*, redescrip. holotype and others (p. 77, pls. viii, xiv), *O. miles* n. sp., Malay Archipelago (p. 90, pl. ix), *O. nereidina* (p. 81), *O. nobilis* n. sp., Kei Is., Banda Sea, 90 m. (p. 83, pls. xi, xv), *O. obtusa* n. sp., Java Sea, Lesser Sunda Is., and E. of Flores, 69-113 m. (p. 98, pls. xi, xvi), *O. plana*, variations from type, colour (p. 75, pl. viii), *O. propinqua* (p. 81), *O. proteus* n. sp., var. locc. Malay Archipel., 32-83 m., incl. "*O. comata*" Koehl. 1898, 1900 (p. 100), *O. pulchella* n. sp., var. locc. Malay Archipel., 73-247 m. (p. 106, pls. xi, xv),

O. punctolimbata, characters discussed (p. 93), *O. purpurea*, colour (p. 102), *O. pusilla*, added notes (p. 85, pl. ix); KOEHLER (160). *O. roseo-coerulans*; BELL (25) p. 258. *O. simplex* n. sp., Molo Str., Java Sea, 69-90 m., allied to *Ophiotrichoides* (p. 109, pl. x), *O. spinosissima* n. sp., Lombok and Banda, 9-36 m. (p. 104, pl. xi), *O. stelligera*, parasitic gastropod, variations, young (p. 87), n. var. *rugosa*, Banda, Sulu, and Java Seas (p. 88), *O. striolata*, colour (p. 76, pl. xv), *O. tenuis* n. sp., E. of Flores, 40 m. (p. 74, pl. viii); KOEHLER (160). *O. triglochis*; BELL (25) p. 259. *O. trilineata* (p. 73), *O. vitrea* (p. 99); KOEHLER (160).

Ophiotriton vide sub *Ophionereis*.

Ophiotypa simplex; KOEHLER (159).

Ophiozona capensis n. sp., 7 cotypes, off Cape Point, C. St Blaize, Lion's Hd., C. St Francis, 25-900 fm., podial pores restricted to 3 proximal; BELL (25) p. 256, pl. i. *O. projecta* n. sp., Sulu Archipel., Moluccas, Banda Sea, Solor Str., 15-113 m.; KOEHLER (160) p. 19, pl. i.

Ophiura (vide etiam sub *Ophioglypha*):—*O. affinis*; KEMP (152) pp. 180, 194. *O. albida*; COLGAN (61) p. 212; KEMP (152) pp. 180, 193; NORDGAARD (230) p. 159. *O. brevispina*; CLARK (55) p. 5. *O. carnea*; NORDGAARD (230) p. 159. *O. ciliaris*; KEMP (152) pp. 180, 192. *O. robusta*; NORDGAARD (230) pp. 159, 235. *O. sarsi*; op. cit. p. 159; KEMP (152) pp. 193, 205. *O. signata*, forms of mouth-shields, distinction from *O. affinis*; op. cit. pp. 183, 193, pl. xxxiv. *O. texturata*; COLGAN (61) p. 212. *O. trimeni* n. sp., 4 cotypes, off Lion's Hd., S. Hd. Table Mt., 156-230 fm., podial pores restricted; BELL (25) p. 257, pl. i.

Pectinura arenosa (p. 10), *P. gorgonia*, colour (p. 8), *P. infernalis*, added notes, Bell's of 'Alert' coll. perhaps is *P. similis* (p. 7, pl. i), *P. nitens* n. sp., Sapeh Str., Sunda Is., 69 m. (p. 10, pl. i), *P. paucispina* n. sp., Borneo bank & Gilolo Passage, 34-83 m. (p. 4, pl. i), *P. septemspinosa* (p. 9), *P. similis* n. sp., various loc. in Malay Archipelago, 12-59 m. (p. 6, pl. i), *P. sphenisci*, added notes (p. 9), *P. stabilis* n. sp., Pater-noster Is. in Java Sea, and Gilolo Passage, 12-83 m. (p. 5, pl. i); KOEHLER (160).

†*Protaster sedgwicki*; BATHER (21) p. 164.

Sthenocephalus indicus, 204-487 m.; KOEHLER (160) p. 132.

†*Sympterura* n. g. with genotype *S. minveri* n. sp., Lower Devon., Epp-haven, Cornwall; BATHER (21) pl. vi.

(F.) CRINOIDEA*.

Bearing of autotomy and syzygies on classification of *Antedonidae* and *Actinometridae*; MINCKERT (214).

Crinoidea divided into *Palaeocrinoidea* and *Neocrinoidea* [A.D. 1905!]; HERTWIG (136 A) p. 311. *Crinoidea*, or at least recent *Crina*, divided into two Orders, *Stylocrinoidea*, fixed forms, and *Eleutheroocrinoidea*, free forms; MINCKERT (213) p. 496.

†*Acanthocrinus rex*; LEPPLA (180) p. 28; LEPPLA (181) p. 16.

†*Actinocrinus*:—*A.* sp.; THÉVENIN (314): columnals; SMYČKA (303) p. 60. *A. daphne*; CLARKE (60) p. 116.

Actinometra, classification of spp. (p. 207), *A. belli*, regeneration of arms (pp. 204, 215, figg.), *A. fimbriata*, ditto (p. 218), *A. multibrachiata*, ditto (pp. 217, 219), *A. nobilis*, ditto (p. 219); MINCKERT (214). *A. parvicurra*, 14-17 fm., various loc. S. Africa; BELL (27) p. 141.

* Names that are sometimes given the termination *-ites* (e.g. *Pentacrinites*) are here treated as always ending in *-us*.

- A. paucicirra* & *A. quadrata*, regeneration (p. 226), *A. regalis*, ditto (p. 219), *A. sentosa*, ditto (p. 230); MINCKERT (214). †*A. vagnasensis* is Lower Aptian; PELLAT (244).
- †*Agaricocrinus*:—*A. brevis*, *A. bullatus*, *A. wortheni*; ROWLEY (282) p. 310.
- †*Agassizocrinus conicus*; ULRICH (321) p. 58, pl. vi.
- †*Amphoracrinus viminalis*; CLARKE (60) p. 116.
- Antedon* considered to be a misprint for *Anthedon*; MINCKERT (213) p. 496: classification of spp.; MINCKERT (214) p. 206: see also II, B, i, f, 8. *A. sp.*; KEMP (152) p. 187: †MULDER (222). *A. angusticalyx* & *A. angustiradiata*, regeneration; MINCKERT (214) p. 224. *A. barentsi*, syn. of *A. eschrichti*; DOEDERLEIN (80) pp. 397, 399. *A. bifida*; KEMP (152) pp. 179, 187, 205: NOBRE (229) p. 132: vide etiam *A. et Comatula rosacea*. *A. bipartipinna*, regeneration (p. 228), *A. brevipinna*, colour of regenerates (p. 178): regeneration of disc (p. 193), of arms (p. 202 et sqq.); MINCKERT (214). †*A. burgundiaca*; MAIRE (206) p. 242. *A. capensis* n. sp. of *basicirra* group, 13–27 fm., various locc. S. Africa; BELL (27) p. 139, pl. ii. *A. carinata*, partial regeneration of cirri (p. 192), *A. duplex*, regeneration (p. 211); MINCKERT (214). *A. eschrichti*; SCHMIDT (291) p. 19: total regeneration of cirri; MINCKERT (214) p. 169: incl. *A. barentsi* P. H. Carp., distrib.; DOEDERLEIN (80) p. 397: var. *quadrata*, distrib.; loc. cit. p. 398. *A. flexilis*, regeneration; MINCKERT (214) p. 211. †*A. gresslyi*; MAIRE (206) p. 242. *A. inaequalis*, regeneration (p. 224), *A. lusitanica*, ditto (p. 211); MINCKERT (214). *A. magnicirra* n. sp. of *savignyi* group, 300–450 fm., E. London, S. Africa; BELL (27) p. 141, pl. iv. *A. microdiscus*, regeneration (pp. 219, 230), *A. multiradiata*, ditto (p. 221 et sqq., fig. p. 231), *A. multispina*, ditto (pp. 211, 223); MINCKERT (214). *A. petasus*; RETZIUS (275) p. 82, pl. xii. *A. phalangium*; KEMP (152) p. 187: distrib.; DOEDERLEIN (80) p. 402. *A. philiberti*, regeneration; MINCKERT (214) p. 228. *A. proluxa*, distrib., probably local form of *A. tenella* (p. 401), *A. quadrata*, made var. of *A. eschrichti* (q.v.) (p. 398); DOEDERLEIN (80). †*A. rhodanicus*; AIRAGHI (5) pl. 45, pl. *A. rosacea*; †BASSANI (16): GODLEWSKI (115): GRAEFFE (117) p. 331: living attitude; LANKESTER (175) p. 292, fig.: regeneration; MINCKERT (214) p. 209, fig. et sqq.: vide etiam *Comatula* et *A. bifida*. *A. sclateri* n. sp. of *savignyi* group, 250–300 fm., E. London, S. Africa; BELL (27) p. 140, pl. iii. *A. spinifera*, colour of regenerates (p. 184), arm regenerated in place of pinnule (p. 200); MINCKERT (214). *A. tenella*; NORDGAARD (230) pp. 159, 235: SCHMIDT (291) pp. 19, 20: distrib.; DOEDERLEIN (80) p. 400: regeneration; MINCKERT (214) p. 208.
- †*Aorocrinus*:—*A. eris* & *A. helice*; CLARKE (60) p. 117.
- †*Apiocrinus*:—*A. sp.*; REMES (269) p. 61, pl. vii: columnals; AIRAGHI (7) p. 84: PARONA (242) p. 66. *A. elegans*, IBB; TOIT (315) fig. *A. parkinsoni*, *A. polycyphus*; MAIRE (206) p. 234.
- †*Aspidocrinus*:—*A. cullosus*, *A. digitatus*; TALBOT (312) p. 31. *A. scutelliformis*; SHIMER (300) p. 197: WILLIAMS (342) pp. 28, 33, 47: root-nature doubted; TALBOT (312) p. 31.
- †*Balanocrinus* (vide etiam sub *Pentacrinus*):—*B. ? sp.*; ROESSINGER (278) p. 437. *B. buthonicus*; LISSAJOUS (183) p. 696. *B. campichei*; KILIAN (156) pp. 781, 807. *B. pentagonalis*; AEBERHARDT (1) p. 442: KILIAN (156) pp. 776, 781. *B. subteres*; op. cit. pp. 781, 807: REMES (272) p. 4.
- Bathycrinus* regeneration; MINCKERT (214) p. 194. *B. carpenteri*, distrib.; DOEDERLEIN (80) p. 402.
- †*Batocrinus*:—*B. irregularis*; ULRICH (321) p. 47. *B. subaequalis*; ROWLEY (282) p. 310.
- †*Bourgueticrinus*:—*B. sp.*; YOUNG (347) pp. 196, 215. *B. ellipticus*;

- DRECKE (69) p. 19: MURGOCI (223): TREACHER (319) p. 156: WEGNER (333) pp. 123, 125, 126, 132, 148: WHITE (338) pp. 468, 470, 487. *B.* [= *Mesocr.*] *fischeri* (p. 148), *B. listeri* (p. 125); WEGNER (333). *B. thorenti*; MURGOCI (223).
- +*Brachiocrinus* (*Herpetocrinus*?) *nodosarius*, added notes; TALBOT (312) p. 32, pl. iv.
- +*Camerocrinus* [sic] *quarcitarum* n. sp., Ordovician d2 of Řevnits, Bohemia; FRITSCH (100) for fig. see (88) Zool. Rec. 1904.
- +*Carabocrinus geometricus* n. sp., Chazy Limest., L. Champlain, N. Y.; HUDSON (144) p. 282, pl. i.
- +*Cleioocrinidae* n. fam. of *Dicyclica camerata* for *Cleiochr.*; BATHER in Review of SPRINGER (306).
- +*Cleiochrinus*, morphological description and rediagnosis, intermediate between *Camerata* & *Flexibilia*; SPRINGER (306): referred to *Cleioocrinidae* (q.v.), base an exaggeration of the *Archaeocr.* type; BATHER in Review: "ein spezialisierter Rhodocrinide"; JAEKEL in Review.
- +*Cleiochrinus*, err. pro *Cleiochrinus*; LUDWIG (200).
- +*Clioocrinus*, err. pro *Cleiochr.* (q.v.); LAMBERT in Review of SPRINGER (306). *C. magnificus*, incl. *C. grandis*, redescr. from types and other specimens, *C. regius*, redescr. from cotypes; SPRINGER (306) p. 110, pl. Comatula *rosacea*; COLGAN (61) p. 211: vide etiam *Antedon bifida* et *rosacea*.
- +*Conocrinus*:—*C.*? sp., columnals; DONCIEUX (81) p. 111. *C. thorenti*; DOUVILLÉ (83) pp. 19, 21, 27, 50.
- +*Cordylocrinus plumosus*, added notes, perh. incl. *C. parvus*; TALBOT (312) p. 28, pl. iii.
- +*Cosmocrinus ornatissimus* (Hall sub *Cyathocr.*) distinguished from *Maragnier*; WHITFIELD (339) p. 19, pls. ii, iii: this accepted; CLARKE (58).
- +*Cyathocrinus*:—*C. formosus* n. sp., Lower Burlington Limest., Louisiana, Mo.; ROWLEY (282) p. 301, pl. xxi. *C. mammillaris*; MALLADA (208) p. 187. *C. ornatissimus* Hall, referred to *Scytalecr.*; CLARKE (57) p. 44: type-specimen refigured and referred to *Cosmocrinus*; WHITFIELD (339) p. 19, pls. ii, iii. *C. pentagonus* (pp. 16, 26), *C. pinnatus* (pp. 21, 26, 27, 50, 53, 55), *C. planus* (p. 187), *C. quinquangularis* (p. 187); MALLADA (208). *C. rhenanus*; LEPPLA (180) p. 28 & (181) p. 16.
- +*Cyrtocrinus digitatus* n. sp., Tithonian of Stramberg; REMÉŠ (269) p. 60, pl. vii.
- +*Dadocrinus gracilis*:—*D. kunischi*; WYSOGÓRSKI (345).
- +*Decudocrinus*:—*D. aegina* (p. 117), *D. lyrioipe*, *D. pleias*, & *D. subtortuosus* (p. 118); CLARKE (60).
- Decametrocrinidae* n. fam. pro *Decametrochr.* & *Promachocr.*; MINCKERT (213) p. 494.
- Decametrocrinus* n. g. for spp. of *Promachocrinus* with unbranched arms [genotype not mentioned, the spp. would be *D. abyssorum* & *D. naresi*, of which the former agrees better with the diagnosis]; MINCKERT (213) p. 494.
- +*Dichocrinus simplex*; ULRICH (321) p. 33.
- +*Dolatocrinus*:—*D. glyptus* var. *intermedius* & *D. liratus* var. *multiliratus* (p. 118), *D. speciosus* (p. 119); CLARKE (60).
- +*Edriocrinidae* n. fam. of *Inadunata fistulata* [= *Dicyclica inadunata*] for *Edriocr.*; TALBOT (312) p. 20.
- +*Edriocrinus*, rediagnosed; TALBOT (312) p. 22. *E. becraftensis*; SHIMER (300) p. 196. *E. pocilliformis*; op. cit. pp. 183, 200, 201, 232, 233, 238, 262: redescr.; TALBOT (312) p. 23, pl. iv. *E. sacculus*; SHIMER (300) pp. 198, 233.
- Eleutheroocrinoidea* ord. nov. "die freilebenden Crinoideen"; MINCKERT (213) p. 496.
- +*Encrinus*:—*E.* sp.; MARTELLI (309) p. 332. *E.*? sp. columnals; TOCLA

- (317) p. 348, p. vi. *E. aculeatus*; WYSOGÓRSKI (335). *E. cassianus*; MARTELLI (309) p. 331, pl. xi: BLASCHKE (32) p. 166. *E. granulatus*; L. c.; BAKALOW (13): MARTELLI (209) p. 330, pl. xi. *E. liliiformis*; WYSOGÓRSKI (345): columnals; MORICH (219) fig.
- † *Entrochus*:—*E. dentatus*; MALLADA (208) pp. 13, 27. *E. insignis* n. sp., Cenomanian [i. e. Trias], Kotel, E. Balkans; TOULA (317) p. 347, pl. vi: BAKALOW (13).
- † *Eretmocrinus*:—*E. coronatus* (p. 310), *E. nodosus* (p. 303, pl. xxi); ROWLEY (282).
- † *Erisocrinus europaeus*; MALLADA (208) pp. 182, 187.
- † *Eugeniocrinus hoferi*; MAIRE (206) p. 234.
- † *Euryocrinus concavus*; MALLADA (208) p. 187.
- † *Extracrinus*, vide sub *Pentacrinus*.
- † *Glyptocrinus*:—*G. dyeri*, fixed pinnules; SPRINGER (306) p. 106, pl. *G. ramulosus*; AMI (11) p. 843.
- † *Haplocrinus stellaris*; SOBOLEW (304) pp. 68, 70.
- † *Hexacrinus*:—*H. callosus*; MALLADA (208) p. 17. *H. echinatus*; USSHER (323) p. 16.
- † *Homocrinus scoparius*, added notes; TALBOT (312) p. 19, pl. iii.
- † *Ichthyocrinus*:—*I. laevis*; UDDEN (320) p. 402. *I. schucherti* n. sp., New Scotland Limest., Clarksville, N.Y.; TALBOT (312) p. 30, pl. iii. *Isocrinus*, vide sub *Pentacrinus*.
- † *Lyriocrinus*? *beecheri* n. sp., Chazy Limest., L. Champlain, N. Y.; HUDSON (144) p. 277, pl. ii.
- † *Maragnicrinus* n. g. [of *Scytalecrinidae*?], with genotype *M. portlandicus* n. sp., Portage group, Portland, Lake Erie, includes specimen refd. by J. M. CLARKE to *Scytalocr. ornatissimus* (Hall sub *Cyathocr.*); WHITFIELD (339) pp. 17, 18, pl. i: see also CLARKE (58).
- † *Mariocrinus*:—*M. beecheri* n. sp., Coeymans Limest., North Litchfield, N. Y. (pl. i), *M. plumosus*, called genotype [but *M. nobilissimus* is that]; TALBOT (312) p. 25.
- † *Marsupites*:—*M. ornatus* Sow. [sic] slight variations, Westphalia; WEGNER (333) pp. 124, 125, 128, 129, 130, 131, 134, 147. *M. testudinarius*; JUKES-BROWNE (150) p. 39: LAMBERT (169) p. 95: WHITE (338) pp. 470, 473: YOUNG (347) pp. 196, 215.
- † *Melocrinus*:—*M.* (vel *Ctenocr.*) sp. columnals; HAUG (130) p. 766. *M. clarkii*; CLARKE (57) p. 43. *M. nobilissimus* (Hall sub *Mariacr.* 1859) called genotype [N.B. *Melocr.* is 1826; this is really *Mariacr.*], added notes (p. 26, pl. ii), *M. pachydactylus*, added notes (p. 27, pl. i); TALBOT (312).
- † *Mesocrinus fischeri*, vide sub *Bourgueticr.*
- † *Mespilocrinus granifer*; MALLADA (208) pp. 182, 183.
- † *Müllericrinus*:—*M. beaudouini*, *M. beaumonti*, *M. buchianus*, *M. conicus*, *M. converus*, *M. desori*, *M. dilatatus*, *M. dudresnieri*, *M. escheri*, *M. goldfussi*, *M. goupilianus*, *M. granulatus*, *M. horridus*, *M. milleri*, *M. munsterianus*, *M. nodotianus*, *M. regularis*, *M. scalaris*, *M. thirriai*; MAIRE (206) pp. 235–240.
- † *Pachylocrinus*:—*P. merope* (p. 119), *P. paternus* (p. 120); CLARKE (60). *Pentacrinula* nom. nov. pro "pentacrinoid larva" of *Antedon* etc.; MINCKERT (214) p. 191.
- Pentacrinus* (including *Balanocr.* (q. v.), *Extracr.* [i. e. *Pentacr.* s. str.] and *Isocr.* [i. e. *Pentacr.* neontologorum] syn. *Cainocr.*).
- † *Pentacr.* sp.; SCHUMACHER (295) p. 111: columnals, Trias; TOULA (317) p. 348, pl. vi. *P. amblyscalaris*; MAIRE (206) p. 241. *P. angulatus*; ROTHPLETZ (281) p. 29. *P. australis*; HUCKE (143) p. 167, pl. xxiii. *Extracr. babeau*; LISSAJOUS (183) p. 692. *P. bajocensis*; op. cit. p. 691: KILIAN (156) p. 743. *P. basaltiformis*; SCALIA (288). *P. cf. basaltiformis*; ROTHPLETZ (281) p. 29. *P. cf. bavaricus*; TOULA (318)

- p. 286. *P. briareus*; SCALIA (288). *Extracr. buchagauensis*; MAIRE (206) p. 241. *P. carinatus*, notes; WEGNER (333) pp. 125, 148. *P. cristagalli*; DENINGER (73) pp. 438, 439; KILIAN (156) p. 743; LISSAJOUS (183) p. 691; ROTHPLETZ (281) p. 36.
- P. decorus*, anat.; REICHENSFELDER (267).
- + *P. didactylus*; DOUVILLÉ (83) pp. 20, 21, 27, 43, 50. *P. disoni*; ROESSINGER (278) p. 437. *P. fuchsii*; BAKALOW (13). *P. gastaldi*; AIRAGHI (5) p. 45. *P. hiemeri*; LANKESTER (175) p. 287, fig. *P. laevigatus*; BAKALOW (13). *P. marioni*; MAIRE (206) p. 241. *P. cf. nodulosus*; WEGNER (333) pp. 131, 148. *P. oxyacalis*; MAIRE (206) p. 240. *P. pentagonalis ferratus*, discussed (p. 81), *P. cf. personatus*, specimens from Esch and Rombach descr. (pp. 76, 456, pla. i, ii); BENECKE (29). *P. priscus* Kut.; JONKER (148) p. 141. *P. pilonoti*; ROTHPLETZ (281) p. 29. *P. scalaris*; SCALIA (288). *P. subangularis*, Schwabens Medusenhaupt; KOKEN (165) p. 56, pl. *Extracr. aff. subangularis*; BAKALOW (13). *P. tuberculatus*; op. cit.: PAULKE (243) p. 269. *P. wurtembergicus* (= *P. pentagonalis opalinus* Qu.), discussed; BENECKE (29) p. 81.
- P. wyville-thomsoni*; ALBERT (9): RICHARD (276) p. 3.
- + *Platycrinus*:—*P. bozemanensis*; DOUGLASS (82) pp. 417, 421, 422, 423. *P. contritus*; CLARKE (60) p. 120. *P. douglassi*; DOUGLASS (82) pp. 417, 422, 423. *P. gigas* (p. 184), *P. granulatus* (p. 187); MALLADA (208). *P. graphicus*; CLARKE (60) p. 120. *P. huntvillae*; ULRICH (321) pp. 42, 47, 50, 58, pl. vi. *P. richfieldensis*; CLARKE (60) p. 120.
- + *Plicatocrinidae*, n. g. *Pseudosaccocoma* q. v.; REMEŠ (269).
- + *Poteriocrinus*:—*P. sp.*; FOUREAU (96) p. 574: THÉVENIN (314): columnals; HAUG (130) pp. 783, 793, pl. xv. *P. crassus*; MALLADA (208) pp. 182, 184, 186, 187, 196, 316. *P. douglassi*; DOUGLASS (82) p. 417. *P. minutus* (pp. 119, 170, 185, 188, 189, 197), *P. originarius* (pp. 183, 186); MALLADA (208).
- + *Pradocrinus baylei*; MALLADA (208) pp. 12, 16, 21, 37.
- Promachocrinus* restricted to spp. with branched arms [genotype *P. kerguelensis*] (p. 494), *P. vanhoeffenianus* n. sp., 66° 2' 9" S., 89° 38' E., 350–400 m. (p. 496 and text-fig.); MINCKERT (213).
- + *Pseudosaccocoma* n. g. of *Plicatocrinidae*! with genotype *P. strambergensis* n. sp., Tithonian of Stramberg; REMEŠ (269) p. 62, pl. vii and (313).
- + *Pterotocrinus*:—*P. acutus*, *P. capitalis*, *P. depressus*; ULRICH (321) pp. 58, 61, pl. vi.
- + *Reteocrinus o'neulli*, fixed pinnules, tegmina; SPRINGER (306) p. 107, pl.
- + *Rhaphanocrinus gemmeus* n. sp., Chazy Limest., L. Champlain, N. Y.; HUDSON (144) p. 280, pl. ii.
- Rhizocrinus lofotensis*; NORDGAARD (230) pp. 159, 241: (?); KEMP (152) p. 187: distrib.; DOEDERLEIN (80) p. 402.
- + *Rhodocrinus*:—*R. sp.* columnals; HAUG (130) p. 795, pl. xv. *R. bozemanensis* (pp. 417, 421), *R. bridgerensis* (pp. 417, 422); DOUGLASS (82). *R. crenatus*; MALLADA (208) p. 27. *R. douglassi*; DOUGLASS (82) pp. 417, 421, 422. *R. pinnatus*; MALLADA (208) p. 21.
- + *Saccocrinus christyi*; UDDEN (320) p. 402.
- + *Scaphiocrinus*:—*S. corycia*, *S. crineus*, *S. subcarinatus*; CLARKE (60) p. 121.
- + *Scyphocrinus elegans*; MALLADA (207) p. 294 and (208) p. 61.
- + *Scytalocrinus ornatus* (Hall, sub *Cyathocr.*); CLARKE (57) p. 44 and (58): vide etiam *Maragnier*.
- + *Siphonocrinus armosus*; UDDEN (320) p. 402.
- + *Steganocrinus sculptus*; ROWLEY (282) p. 310.
- Stylocrinioidea* ord. nov. "die recen ten festsitzenden Formen"; MINCKERT (213) p. 496.

- †*Talarocrinus*; ULRICH (321) p. 54.
 †*Tazocrinus*:—*T. communis* (p. 121), *T. kelloggi* (p. 122), *T. tardus* (p. 122); CLARKE (60).
 †*Thiollierocrinus*:—*T. sp.*; REMÉ (270, 271, 274), *T. flexuosus* (p. 61, pl. vii), *T. heberti* (p. 60); REMÉ (269).
 †*Thysanocrinus arborescens* n. sp., Coeymans Limest., North Litchfield, N. Y.; TALBOT (312) p. 23, pl. i.
 †*Uintacrinus*:—*U. sp.*, British; WHITE (338) p. 470; YOUNG (347) pp. 197, 215. *U. westfalicus*, cups; WEGNER (333) pp. 121, 123, 137, 147.

(G.)—†CYSTIDEA*

(including EDRIOASTEROIDEA).

- Agelacrinus dicksoni*; AMI (11) p. 84j. *A. chapmani*, vide Corrigenda.
Caryocrinus ornatus; UDDEN (320) p. 399.
Caryocystis rouvillei; DÉPÉRET (74) p. 434.
Corylocrinus pyriformis; DÉPÉRET (74) p. 434.
Echinospaera baltica; DÉPÉRET (74) p. 434. *E. cf. baltica*; BRESSON (41) p. 91; MALLADA (207) p. 307. *E. murchisoni*; op. cit. pp. 267, 384.
Ecocystis primaeva at Coulouma; MIQUEL (216) p. 476.
Glyptocystis forbesi; RAYMOND (265) p. 357.
Malocystis sp.; RAYMOND (265) p. 358. *M. emmonsii* n. sp., Chazy Limest., L. Champlain, N. Y.; HUDSON (144) p. 270, pl. i; CLARKE (60) p. 119; RAYMOND (265) pp. 357, 358. *M. murchisoni*; op. cit. pp. 357, 363, 364.
Palaeocystis sp. (p. 358), *P. tenuiradiata* (p. 357); RAYMOND (265).
Pleurocystis squamosa; AMI (11) p. 84j.
Stromatocystis cannati (Miquel, sub *Trochocystis*), Cambrian, Coulouma, Aude, redescribed and now first figd.; MIQUEL (216), pp. 476, 482, pl. xv.
Trochocystis sp., nondescript. (p. 476), *T. barrandei* (pp. 474, 475); MIQUEL (216). *T. bohemiae*; MALLADA (207) pp. 27, 66.

(H.)—†BLASTOIDEA.

- Blastoidocrinus carcharidens*; HUDSON (144) p. 272.
Codaster gracillimus, hydrospires in anal area (p. 307), pl. xxi), *C. grandis* (p. 309, pl. xxi), *C. laeviculus*, ? *Phaenoschiema* (p. 309, pl. xxi), *C. superbus* n. sp., Upper Burlington Chert, Louisiana, Mo. (p. 308, pl. xxi); ROWLEY (282).
Cryptoblastus melo; ROWLEY (282) p. 301, pl. xxi.
Lophoblastus pentagonus n. sp., Lower Carbonif. Chouteau Limest., Bowling Green, Mo.; ROWLEY (282) p. 302, pl. xxi.
Mesoblastus glaber; ULRICH (321) p. 47, (l) p. 57, pl. vi. *M. kirkwoodensis*?; ROWLEY (282) p. 307, pl. xxi.
Metablastus bipyramidalis with brachioles (p. 307, pl. xxi), *M. lineatus* with stem (pp. 306, 307, pl. xxi); ROWLEY (282).
Nucleocrinus verneuili; PROSSER (261).
Orophocrinus conicus? (p. 306, pl. xxi), *O. stelliformis* (p. 306, pl. xxi), ? juv. (p. 306, pl. xxi); ROWLEY (282).

† All extinct.

* Names that are sometimes given the termination *-ites* (e.g. *Anomalocystites*) are here treated as always ending in *-us*, *-a*, or *-is*, as the case may be.

- Pentremites* sp.; GIRTY (113): [afterwards *maccallies*]; McCALLIE (208).
P. cavus n. sp., Lower St. Louis Limest., near Princeton, Ky.; ULRICH (321) pp. 33, 57, pl. vi. *P. conoideus*; op. cit. pp. 30, 47, 57, pl. vi: ROWLEY (282) p. 306, pl. xxi. *P. florealis* (pp. 42, 47, 50, 58, pl. vi), *P. fohsi* n. sp., Birdsville formation of Chester group, near Princeton, Ky. (pp. 63, 64, pl. vii), var. *marionensis* n. var., Birdsville formn. near Marion, Ky. (p. 64, pl. vii), *P. godoni* (pp. 54, 58, pl. vi) & († p. 47); ULRICH (321). *P. leda*; CLARKE (57) p. 44. *P. oberus* (pp. 63, 64, pl. vii), *P. pyramidatus* n. sp., Birdsville formn. of Chester group, W. Kentucky (p. 64, pl. vii), *P. pyriformis* (p. 57, pl. vi), *P. sulcatus* (p. 61); ULRICH (321).
Pentremitidea angulata (p. 27), *P. lusitanica* (p. 27), *P. malladae* (p. 37), *P. paillettei* & *P. schultzi* (pp. 27, 37); MALLADA (208).
Phaenoschisma acuta (p. 37), *P. archiaci* (p. 27), *P. nobile* (p. 37), *P. verneuili* (p. 27); MALLADA (208).
Schizoblastus sayi, covering plates; ROWLEY (282) p. 302, pl. xxi.
Troostocrinus hispanicus; MALLADA (208) p. 37.

(K.)—†INCERTAE SEDIS.

- Astrechinus pentagonus* nom. nud.: JAEKEL (145).
Paropsonema cryptophysa [sic.] Clarke (1900) not an Echinoderm but cast of a jelly-fish allied to *Porpita*; FUCHS (101).

† All extinct.

XV. VERMES.

BY

CORA B. SANDERS, F.L.S.

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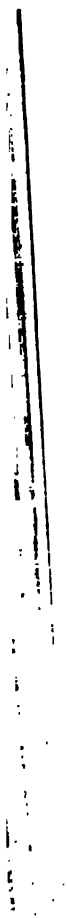
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†*Leptastrea anomala*, Middle Miocene, Bellini (9) p. 621.

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†*Leptophyllia fromenteli*, Valfin, etc., *L. spinosa*, Moulin de Gajo, *L. cesaredensis*, Cesaráda, Upper Jurassic, figg., diagn., Koby (105) pp. 98 & 99; *L. fungina*, figg., at Altschakaya, *L.* cf. *plana*, fig., at Altschakaya, *L. pulchra* n. sp., at Altschakaya, *L.* cf. *pulchra* n. sp., *L. fromenteli*, *L. longistyla* n. sp., Missuna, Bull. Soc. Moscou xviii, 1904, pp. 207-210.

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XVII. SPONGIÆ.

BY

PROFESSOR E. A. MINCHIN.

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INTRODUCTION.

I. The Zoological Record for 1905 includes only 48 pages, exclusive of abstracts and reviews. This number is much below the average; but it should be noted that some of the memoirs recorded in the Record for 1904 (for instance, Nos. 36, 53A, 54) should have been included in the present Record.

II. Under the heading Biology, the most important contributions dealing with the skeleton. WOODLAND (47) describes the formation of spicules in Calcarea, and BÜTSCHLI (4), MAAS (19), and WEINER (42) discuss the nature of the skeletal material of calcareous sponges. VOSMAER & WIJSMAN (41) deal in a similar manner with siliceous sponges. MINCHIN (22) discusses the phylogeny of Hexactinellid sponges. DENDY (8) develops some interesting views upon the phylogeny and relationships of the Demospongiæ. As regards anatomy and histology, a number of facts relating to various species are brought forward by DENDY (39) for calcareous sponges and by BAER (1), DENDY (4), KIRKPATRICK (28), and THIELE (36) for siliceous sponges. There are no contributions dealing specially with Embryology in this year's Record, and not a record under Physiology.

III. Under Geographical Distribution the most important memoirs are those of DENDY (4) on sponges from the Gulf of Manaar, THIELE (36) on sponges from the Coasts of Patagonia and Chili, LUNDBECK (17) on N. Atlantic sponges, and BAER (1) on sponges from E. and S. Africa. There are no contributions of any note to the geological record of sponges.

IV. The systematic portion of the Record includes much of interest, except for Hexactinellida, which are practically a blank. In Calcareo URBAN (39) describes new forms from California, and MINCHIN (23) attempts to unravel an extraordinary tangle of mistaken identification and nomenclature in the case of a well-known European (and probably British) species of Ascon. In Demospongiae we have many important additions to the systematic catalogue from DENDY (4), LUNDBECK (17), THIELE (36), SVARCHEVSKIĖ (35), TOPSENT (37), PICK (28), and BAER (1). Scarcely less important than the additions is the elimination by SCHULZE (31) of Haeckel's so-called "Deep Sea Keratosa," long suspected, and now definitely proved, to be not sponges but Protozoa.

Owing to the many rearrangements which the systematic arrangement of the Demospongiae has undergone, the Recorder has not attempted to classify sponges further than suborders in the present Record, but places all categories of lower taxonomic value in alphabetical order.

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Structure of the poral and cloacal vestibules of *Cinachyra barbata* Sollas, with comparisons with other species ; KIRKPATRICK (15).

Canal-system of *Hexadella indica*, pp. 61 & 62, pl. i, figg. 1-3 : of *Myriastrea clavosa*, pp. 73 & 74 : of *Pilochrota hornelli*, p. 76 : of *Ecionema carteri*, p. 80 : of *Tetilla poculifera*, p. 91, *T. anomala*, p. 92, and *T. limicola*, p. 94 : of *Paratetilla cineriformis*, p. 98 : of *Coppatias reptans*, p. 108 : of *Xenospongia patelliformis*, p. 118 : of *Spirastrella tentorioides*, p. 126 : of *Collocalypta digitata*, p. 200 : of *Hippospongia anomala*, p. 216, and *H. dura*, p. 216 : of *Hircinia fusca*, p. 220, *H. tuberosa*, p. 221, *H. schulzei*, p. 222, and *H. anomala*, p. 223 : of *Leucandra donnani*, p. 229 ; DENDY (8).

Anatomy of *Cliona chilensis*, pp. 410 & 411 : of *Suberites sulcatus*, p. 417, and *S. ruber*, p. 419 : of *Axinella crinita*, p. 425 : of *Pseudaxinella egregia*, p. 426 : of *Higginsia papillosa*, p. 428 : of *Desmacidon platei*, p. 437 : of *Batzella corticata*, p. 439 : of *Eurypon miniaceum*, p. 446 : of *Microciona discreta*, p. 448 : of *Hymedesmia irritans*, p. 455 : of *Oligoceras sororia*, p. 480, and *O. paupera*, p. 481 : of *Aplysilla sulphurea*, p. 488, and *A. lendenfeldi*, p. 489 : of *Halisarca duyardini* var. *magellanica*, p. 490 ; THIELE (36).

Canal-system of *Raspailia* ; PICK (28) pp. 38 & 39.

Anatomy of *Tethya armata*, p. 4 : of *Tethyopsilla globosa*, p. 5 : of *Ancorina buccifera*, p. 7 : of *Sidonops globosa*, p. 9 : of *Reniera implexa*, p. 13 : of *Tedania digitata*, p. 17 : of *Lissodendoryx monticularis*, p. 23 : of *Coppatias sansibarensis*, p. 24 : of *Donatia viridis* and *D. parvistella*, pp. 26 & 27 ; BAER (1).

Canal-system of *Darwinella warreni*, p. clxxxii : of *Pteraplysilla minchini*, p. clxxxv ; TOPSENT (37).

(iv) *Skeletal System.*

(a) **General Accounts.**—Skeleton of the genus *Raspailia* ; PICK (28) pp. 41-44.

(b) **Material of the Skeleton.**—Nature of the material of calcareous spicules ; BÜTSCHLI (4) ; MAAS (19) ; WEINSCHENK (42).

Substance of siliceous spicules termed spicopal : structure of the spicules of *Tethya lyncurium* ; VOSMAER & WIJSMAN (41).

(c) **Morphology, Development and Nomenclature of Skeletal Elements.**—Morphology and variation of sponge spicules ; WILSON (46) pp. 38 & 39 and 42.

Morphology of monaxon spicules of *Calcarea* ; MINCHIN (23) p. 10.

The development of the spicules of *Sycon* ; WOODLAND (47).

Spicules of Hexactinellida ; MINCHIN (22) pp. 443-447.

Morphology of the chela and ancora and of their varieties, pp. 2-7 : abnormal spicules of *Mycale lingua*, pp. 31 & 32, text-fig. 1 : special embryonic spicules (microscleres) in *Cladorhiza iniquidentata*, p. 93, *C. corticocancellata*, p. 96 and *Chondrocladia gigantea*, p. 106 : morphology of the bipocilla of *Iophon* and *Pocillon*, p. 174 : of the birotula, p. 197 : the term sphaerancora proposed for the melou-shaped ancora of *Melon-anchora*, p. 211, footnote, their development, p. 214 ;

(d) **Skeletal Anatomy.**—Variation in skeletal framework of sponges; WILSON (46) p. 39.

Arrangement of spicules in *Leucosolenia*; URBAN (39) pp. 43 & 44.

(v) *Histology.*

Histology of *Leucosolenia eleanor*; URBAN (39) pp. 46-55.

Structure of the scleroblasts of Sycons; WOODLAND (47) pp. 250-251.

Histology of *Raspailia*; PICK (28) p. 40.

Spherical cells similar to "cellules sphéruleuses" in *Hexadella*; PICK (28) p. 62, pl. i, figg. 1-3: histology of cortex of *Pilochrota hornelli*, pigment-cells, etc. in *Ecionema laviniensis*, p. 82: fibre-cells and spiral cells, perhaps symbiotic algæ, in *Coppatias reptans*, p. 108 and *Asthaeckeli*, p. 109: cortex and scleroblasts in *Xenospongia patellij*, p. 118: pigment-cells in *Reniera pigmentifera*, p. 143: cells, pro-pigment-cells in *Acanthella stabelliformis*, p. 193: bands of fibrous tissue in *Euspongia officinalis*, var. *ceylonensis*, p. 212, in *Hircinia schulzei*, and *H. anomala*, p. 223; DENDY (8).

C. PHYSIOLOGY.

Vacant.

D. BIONOMICS.

Symbiotic algæ? in *Coppatias reptans*, p. 108 and *Asteropus haasii*, p. 109; DENDY (8).

E. REPRODUCTION AND DEVELOPMENT.

Ova of *Raspailia*; PICK (28) pp. 44 & 45.

Ova with pseudopodia in *Tetilla limicola*; DENDY (8) p. 94.

Ova and embryos in *Demacidon platei*, p. 437: in *Aplysilla lendeni*, p. 489; THIELE (36).

Embryos in *Megalopastas elegans*; DENDY (8) p. 205.

Embryos in *Esperiopsis villosa*, pp. 12 & 13: in *Asbestopluma pennsylvanica*, p. 50, *A. furcata*, p. 57, *A. cupressiformis*, p. 61, *A. lycopodium*, p. 65, *A. infundibulum*, p. 71 (comparison of spiculation of embryos of *Asbestopluma* spp. p. 74): in *Cladorhiza abyssicola*, p. 82, *C. gelida*, p. 86, text-fig. 2, *C. tenuisigma*, p. 90, *C. iniquidentata*, p. 92, text-fig. 1, *Corticocancellata*, p. 96, text-fig. 5, and *C. oxecta*, p. 100, text-fig. 1, *Chondrocladia gigantea*, p. 106: in *Homœodictya stabelliformis*, p. 107, in *Myxilla incrustans*, p. 137, *M. fimbriata*, p. 143, *M. brunnea*, p. 14, *pedunculata*, p. 149, and *M. diversiancorata*, p. 151: in *Lisodendium stipitata*, p. 172: in *Iophon piceus*, p. 179: in *Forcipia fabriciana*, p. 180, and *F. thielei*, p. 208; LUNDBECK (17).

F. MISCELLANEA.

Bibliography.—Titles of 19 memoirs on sponges with abstracts; MAAS (20).—Titles of 52 memoirs on sponges, with abstracts; WELLS (43).—Special Bibliography of the Ceylon Sponge-Fauna; DENDY (8).—Bibliography of the genus *Raspailia*; PICK (28) pp. 2-6.

Technique.—Methods for studying calcareous sponges; URBAN (39) pp. 33-36.—Methods used for the investigation of *Raspailia*; PICK (28) pp. 36 & 37.

Economics.—Economic notes on Western Australian sponges; WHITELEGGE (44).

III. DISTRIBUTION.

A. GEOGRAPHICAL.

a. MARINE.

(i) **General.**—Oceanographical relations of sponges; JOUBIN (14).
Geographical distribution of *Raspailia*; PICK (28) pp. 45 & 46.

(ii) **Atlantic Ocean and Adjacent Seas.**—North Atlantic Monaxoidea collected by the Ingolf Expedition, *Esperiopsis*, *Mycale*, *Asbestopluma*, *Cladorhiza*, *Chondrocladia*, *Artemisina*, *Homæodictya*, *Dendroicella* n. g., *Myzilla*, *Lissodendoryx*, *Iophon*, *Iotrochota*, *Forcespia*, *Melonanchora*, in all 69 spp., of which 33 nn.; LUNDBECK (17).

Skerries, Co. Dublin, list of 10 sponges found; COLGAN (7).

Straits of Dover, 4 spp. added to the faunistic list; HALLEZ (11).

Norwegian fiords, list of 9 spp. of sponges dredged; NORDGAARD (25) p. 156.

Lesina Adriatic, *Darwinella dalmatica*, n. sp.: Coast of France, Cour-souilles (Calvados), *Pteraplynsilla minchini*, n. sp.: Azores, *Darwinella duplex* n. sp.; TOPSENT (37).

Adriatic, 7 spp. of *Raspailia*, 3 nn.; PICK (28).

Black Sea, *Halichondria*, *Pellina*, *Petrosia*, *Reniera*, *Pachychalina*, *Esperella*, *Myzilla*, *Stylopus*, *Raspailia*, *Suberites*, *Protosuberites* n. g., *Cliona*, *Kowalewskyella* n. g., in all 32 spp., of which 8 nn.; SVARCHEVSKII (35).

(iii) **Indian Ocean and Adjacent Seas.**—Zanzibar, Cape Town, and Papeete, *Tethya*, *Tethyopsis*, *Ancorina*, *Sidonopsis*, *Halichondria*, *Reniera*, *Pachychalina*, *Siphonochalina*, *Tedania*, *Mycale*, *Dendoryx*, *Lissodendoryx*, *Coppatias*, *Donatia*, in all 20 spp., of which 15 nn., with 3 n. varr.; BAER (1).

Gulf of Manaar and Ceylon seas, *Hexadella*, *Dercitopsis* n. g., *Plakinastrella*, *Steba*, *Myriastrea*, *Pilochrota*, *Stelletta*, *Ecionema*, *Geodia*, *Tetilla*, *Craniella*, *Paratetilla* n. g., *Discodermia*, *Aciculites*, *Taprobane* n. g., *Petromica*, *Coppatias*, *Asteropus*, *Cryptotethya* n. g., *Tethya*, *Xenospongia*, *Hymedesmia*, *Spirastrella*, *Placospongia*, *Negombo* n. g., *Cliona*, *Suberites*, *Chondrilla*, *Chondrosia*, *Gellius*, *Gelliodes*, *Toxochalina*, *Strongylophora* n. g., *Reniera*, *Petrosia*, *Halichondria*, *Trachyopsis* n. g., *Pachychalina*, *Chalina*, *Cerauchalinus*, *Siphonochalina*, *Desmacella*, *Acanthoxifer* n. g., *Esperella*, *Paresperella* n. g., *Iotrochota*, *Phlaodictyon*, *Histoderma*, *Myzilla*, *Cluthria*, *Raspailia*, *Agelas*, *Echinodictyum*, *Aulospongia*, *Acarnus*, *Cyamon*, *Plocamia*, *Eubaria*, *Rhabderemia*, *Spongosorites*, *Hymeniacidon*, *Thrinacophorus*, *Azinella*, *Phakellia*, *Acanthella*, *Auletta*, *Leucophaeus*, *Cio-calyptra*, *Collocalypta* n. g., *Darwinella*, *Megalopastus* n. g., *Spongelia*, *Psammopemma*, *Cacospongia*, *Euspongia*, *Hippospongia*, *Phyllospongia*, *Hircinia*, *Aplysina*, *Leucosolenia* (*Cluthrina*), *Leucandra*, *Heteropegma*, in all 145 spp., of which 77 nn., with 23 n. varr.: complete list of Ceylon sponge-fauna, pp. 230-234; DENDY (8).

Maldives, *Darwinella gardineri* n. sp.: Natal Coast, *D. warreni* n. sp.; TOPSENT (37).

Singapore, *Cinachyra*, *Aurora*, *Ancorina*, *Spirastrella*, *Esperella*, *Rhaphidophlus*, *Aulena*, *Gellius*, *Gelliodes*, *Spongelia*, *Petrosia*, *Reniera*, *Cacoschalina*, *Cladochalina*, *Pachychalina*, *Euchalina*, *Euspongia*, *Hippospongia*, in all 24 spp.; DRAGNEWITSCH (9).

Western Australia, economic notes on 5 spp. of sponges; WHITE (44).

(iv) **Pacific Ocean and Adjacent Seas.**—Coast of Columbia, *Esperella bellabellensis* n. sp.; LAMBE (16).

Sponges of coasts of S. America, Mexico, and Galapagos Ia. [see WILSON (46).

Monterey Bay, California, *Leucosolenia*, *Sycandra*, *Rhabdoda*, *Leucandra*, in all 5 spp., of which 4 nn.; URBAN (39).

Mangareva, Gambier Islands, *Cliotheosa seurati* n. g., n. sp.; TILLY (38).

Coasts of Chili and Patagonia and Straits of Magellan, *Geodia*, *Cliona*, *Clionopsis* n. g., *Polymastia*, *Prosuberites*, *Suberites*, *Hymeniacoma*, *Vosmaeria*, *Axinella*, *Pseudaxinella*, *Plicatella*, *Higginsia*, *Tedania*, *Besleria*, *Batzella*, *Esperiopsis*, *Mycale*, *Myxilla*, *Lophosiphonia*, *Eumecyon*, *Microciona*, *Clathria*, *Ophlitaspongia*, *Hymedesmia*, *Stylotellopsis*, *Halichondria*, *Reniera*, *Pellinella* n. g., *Pachychalina*, *Chalina*, *Chalina*, *Oligoceras*, *Cacospongia*, *Spongia*, *Hircinia*, *Spongelia*, *Aphrospongia*, in all 80 spp., of which 67 nn.; THIELE (36).

β. FRESHWATER SPONGES.

Freshwater sponges as bearing on the question of the origin of water fauna; PEISENER (27) pp. 704, 705, 708.

Ireland, localities for *Euspongilla lacustris* and *Heteromeyenia*; STEPHENS (34).

Lakes of S. Tyrol, spicules of *Euspongilla lacustris*; HUBER (13); Winter-fauna of Lake Kaban, *Euspongilla lacustris* and *Ephedra*; MEISSNER (21) p. 108.

B. GEOLOGICAL.

(i) GENERAL.

Vacant.

(ii) CAINOZOIC.

Pleistocene:—Lower Saarian (Saharian?) near Reggio, *Catantactinellid* sponge-spicules; NEVIANI (24).

(iii) MESOZOIC.

Cretaceous:—Cretaceous of the Iser region, sponges, pp. 18, 55, 56, 159, 168, 183, 184; ZAHÁLKA (48).—Lower Cretaceous of the Neuchâtel, fossil sponges; SCHARDT & DUBOIS (30) pp. 268, 276, Government of Ekaterinoslaw, 7 spp. of fossil sponges; FAVRE (10).

Jurassic:—Upper Jurassic of Hungary, 2 fossil sponges; PAPP (81).—Upper Jurassic of the Jura of Neuchâtel, 6 spp. of sponges; SCHARDT & DUBOIS (30) p. 236.—Tithonian of Stramberg, Moravia, sponges; REMEK (29).

Trias:—Upper Keuper (Pachycardientuffe) of South Tyrol, sponges; BLASCHKE (3) pp. 164, 165.

(iv) PALÆOZOIC.

General:—Type-specimens of palæozoic N. American sponges New York State Museum; CLARKE (6).

Devonian:—Hamilton group, Indiana, nn. spp. of *Hindia*, *Somphospongia*, and *Vermispongia* n. g.; WHITFIELD (45).

Silurian:—of Victoria and Queensland, spp. of *Receptaculites*; CHAPMAN (5).

Ordovician:—Chazy-formation, *Eospongia varians* and *Strephochetus* spp.; SEELY (33).

IV. SYSTEMATIC.

A. PORIFERA, GENERAL.

The Non-Calcareea considered as a class and divided into Myxospongiada, Triaxonida, Tetraaxonida, and Euceratosa, "four natural groups... which may be conveniently regarded as of ordinal rank"; DENDY (8) p. 60.

List of sponges from coasts of S. America, Mexico, and Galapagos Is., nearly all cited as "nov. spp.," but without descriptions: WILSON (46).

Catalogue of type-specimens of palæozoic sponges in the New York State Museum: CLARKE (6).

B. CALCAREA.

(i) HOMOCÆLA.

Clathrina (*Ascandra*, *Leucosolenia*) *contorta* Bwk., description and synonymy: includes *Ascetta spinosa* Lend.: MINCHIN (23).

Leucosolenia Bow., defined; DENDY (8) p. 226.—*L. (Clathrina) coriacea* Mont., var. *ceylonensis*, n. var.: DENDY (8) p. 226, 227, pl. xiii, fig. 8.—*L. eleanor*, n. sp. Monterey Bay, California: URBAN (39) pp. 36-55, pl. vi, figg. 1-62, pl. vii, figg. 63-68.—*L. (Clathrina) tenuipilosa*, n. sp., Ceylon seas: DENDY (8) pp. 227, 228, pl. xiii, fig. 9.

(ii) HETEROCÆLA.

Amphorisicida, defined: DENDY (8) p. 229.

†*Eudea* sp.: BLASCHKE (3) p. 165.

Grantia compressa, spicule-formation: WOODLAND (47).

Grantiida, defined: DENDY (8) pp. 228.

Heteropegma Polej., defined, p. 230; *H. nodus-gordii* Polej., p. 230: DENDY (8).

Leucandra H., defined; DENDY (8) p. 228.—*L. apicalis*, n. sp., Monterey Bay, California: URBAN (39) pp. 67-70, pl. vii, figg. 89-107.—*L. donnani*, n. sp., Gulf of Manaar: DENDY (8) pp. 228, 229, pl. xiii, fig. 10.—*L. heathi*, n. sp., Monterey Bay, California: URBAN (39) pp. 59-67, pls. viii, ix.

Sycon seu *Sycandra*, *S. coacta*, n. sp., Monterey Bay, California: URBAN (39) pp. 55-59, pl. vii, figg. 69-88.—*S. ciliatum* and *S. coronatum*, spicule-formation: WOODLAND (47).

C. HEXACTINELLIDA.

(i) LYSSACINA.

†*Receptaculites australis*, pl. i, figg. 2-7, pl. ii, pl. iii, figg. 2-7, pp. 7-9; Queensland specimens, pp. 9-12: CHAPMAN (5), P. Soc. Victoria xviii.—

†*R. fergusoni*, n. sp., Silurian, Gippsland: CHAPMAN (5) p. 6, pl. i, figg. 1, 3, and pl. iii, fig. 1, P. Soc. Victoria xviii.

(ii) *DICTYONINA*.

- †*Craticularia vulgata* Poč. : ZAHÁLKA (48) pp. 183, 184.
 †*Cribrospongia reticulata* : FAVRE (10) p. 96.
 †*Pleurostoma bohemicum* : ZAHÁLKA (48) pp. 22, 159, 168.
 †*Plocoscyphia* sp. : FAVRE (10) p. 98 ; ZAHÁLKA (48) pp. 22, 55, 159.
 †*Pyrospongia vrbæi* Zah. : ZAHÁLKA (48) pp. 183, 184.
 †*Scyphia beaumonti* : FAVRE (10) p. 97.
 †*Ventriculites angustatus* : ZAHÁLKA (48) pp. 22, 159, 168.—†*V. cornis*, p. 95 ; †*V. interruptus*, p. 95 ; †*V. pedester*, p. 94 ; †*V. rad.* p. 94 : FAVRE (10).—*V. sp.* : ZAHÁLKA (48) pp. 18, 22, 159.

D. DEMOSPONGIÆ.

Tetraxonida, defined to include all Demospongiæ except Myxospongia Keratosa : DENDY (8) pp. 63, 64.

(i) *TETRACTINELLIDA*.

Tetractinellida, defined and divided into two Suborders—(1) Homosclerophora = Microsclerophora Sollas, "in which microscleres and scleres are not yet sharply differentiated from one another and triaenes are developed" (p. 64), (2) Astrophora (p. 67), (3) Sigalphora (p. 89) ; the group Carnosa to be abandoned, the Microsclerophora to be placed among Tetractinellida as a Suborder Homosclerophora, the Microtriaenosa to be placed amongst the triaene-bearing Tetractinellida, and the Oligosilicina to be placed near the *Tethyidæ*, pp. 64, 65 : DENDY (8).

(1) Sub-order CHORISTIDA.

- Ancorina* O., defined : BAER (1) p. 6 ; DRAGNEWITSCH (9) p. 12.—*A. lifera* (Carter), described : BAER (1) pp. 6-9, pl. i, fig. 3, pl. figg. 11-19.—*A. simplex* Lend., described : DRAGNEWITSCH pp. 12, 13.
Aurora Soll., defined, p. 10 ; *A. globostellata* Carter, described, p. DRAGNEWITSCH (9).
Calcabrina Sollas, a synonym of *Stæba* Sollas, q. v. ; DENDY (8) p. 70.
Cinachyria Sollas, defined : DRAGNEWITSCH (9) p. 9.—*C. barbata* : structure of the oscules and comparisons with other species : K PATRICK (15).—*C. voeltzkowi* Lend., described : DRAGNEWITSCH pp. 9, 10.
Corticium plicatum O. S., referred to *Stæba* Sollas, q. v. : DENDY (8) p. 36 fathoms, pp. 95, 96, pl. iv, fig. i : DENDY (8). (See also *Tethya* in *Dercitopsis*, n. g. of *Plakinidæ*, for *D. ceylonica*, n. sp. from off G 100 fathoms : DENDY (8) pp. 65-67, pl. ii, fig. i.
Ecionema Bow., defined, p. 79 ; *E. carteri*, n. sp. from Gulf of Manaar Ceylon Seas, shallow water to eight fathoms, pp. 79-81, pl. i, fig. 1 ; *E. lariniensis*, n. sp. from off Mount Lavinia, 30 fathoms, pp. 81, 82, pl. iii, fig. 2 : DENDY (8).
Geodia Lam., defined, p. 83 ; *G. areolata* Carter, described, pp. 87, DENDY (8).—*G. magellani* Soll., described : THIELE (36) p. 408.
perarmata Bow., described, pp. 83-85 ; *G. peruncinata*, n. sp. : 12 miles off Galle, 100 fathoms, pp. 85-87, pl. iii, figg. 3, 3A, 3B
ramodigitata Carter, described, pp. 88, 89 : DENDY (8).
Geodiidæ, defined : DENDY (8) p. 83 ; BAER (1) p. 9.
Myriastræa Sollas, defined, p. 71 ; *M. clavosa* (Ridley), described, p. 72
tethyopsis (Carter), described, pp. 72-74 : DENDY (8).

Pachastrellidae, definition : DENDY (8) p. 67.

Paratetilla, n. g. for *Tethya merguensis* Carter, and *P. cineriformis*, n. sp., Gulf of Manaar and Ceylon Seas : DENDY (8) pp. 97, 98, pl. iii, fig. 7.

Pilochrota Sollas, defined, p. 74 ; *P. haeckeli* Sollas, described, pp. 74, 75, pl. ii, fig. 4 ; *P. hornelli*, n. sp. from Galle, shallow water, pp. 75-77, pl. ii, fig. 5 : DENDY (8).

Plakinastrella Schulze, defined, to be removed from *Plakinidae* to *Pachastrellidae*, p. 67 ; *P. intermedia*, n. sp. from off Galle, 100 fathoms, pp. 67-69, pl. i, fig. 4, pl. ii, fig. 2 ; *P. schulzei*, n. sp. from off Galle, 100 fathoms, pp. 69, 70, pl. ii, fig. 3 : DENDY (8).

Plakinidae, definition and affinities, the genus *Plakinastrella* to be removed from it : DENDY (8) p. 65.

Samus simplex Carter, referred to *Staeba* Sollas, q. v. : DENDY (8) p. 70.

Sidonops Sollas, defined, p. 9 ; *S. globosa*, n. sp., Cape Town, pp. 9, 10, pl. i, fig. 4, pl. iv, figg. 1-6 : BAER (1).

Stelletta O. S., defined, p. 77 ; *S. herdmani*, n. sp., Gulf of Manaar and off Galle, up to 100 fathoms, pp. 77, 78, pl. ii, fig. 6 ; *S. vestigium*, n. sp. from off Talaivillu Paar, 10-14 fathoms, pp. 78, 79, pl. ii, fig. 7 : DENDY (8).

Stellettidae, defined : BAER (1) p. 6 ; DENDY (8) p. 71.

Staeba Sollas, defined, to be retained distinct from *Dercitus* for *Samus simplex* Carter, *Corticium plicatum* O. S., and *S. extensa* n. sp., and to include *Calcabrina* Sollas, p. 70 ; *S. extensa*, n. sp. from off Mutwal Island, 10-35 fathoms, pp. 70, 71, pl. v, fig. 1 : DENDY (8).

Tethya Lam., genus defined, p. 4 ; *T. armata*, n. sp., Zanzibar, pp. 4, 5, pl. i, fig. 1, pl. iii, figg. 1-5 : BAER (1).

Tethyopsis Lend., defined, p. 5 : *T. globosa*, n. sp., Zanzibar, pp. 5, 6, pl. i, fig. 2, pl. iii, figg. 6-10 : BAER (1).

Tethyopsillidae, defined : BAER (1) p. 5.

Tetilla O. S., defined, p. 89 ; *T. anomala*, n. sp., Coast of Ceylon, 10-36 fathoms, pp. 91-93, pl. iii, fig. 5 ; *T. hirsuta* Dendy, described, pp. 89, 90 ; *T. limicola*, n. sp., Tamblegam Lake, Trincomalee, pp. 93-95, pl. i, fig. 7, pl. iii, fig. 6 ; *T. poculifera*, n. sp. from Gulf of Manaar and W. Coast of Ceylon, deep water, pp. 90, 91, pl. i, fig. 6, pl. iii, fig. 4 : DENDY (8).

Tetillidae, defined : DENDY (8) p. 89.

(2) LITHISTIDA.

Lithistida, definition and characters : DENDY (8) p. 99.

Aciculites O. S., defined, should be referred to the *Azoricidae*, p. 101 ; *A. orientalis*, n. sp., Ceylon seas, pp. 101, 102, pl. iv, fig. 3 : DENDY (8).

Discodermia Bocage, defined, p. 99 ; *D. emarginata*, n. sp. from 12 miles off Galle, 100 fathoms, pp. 99-101, pl. iv, fig. 4 : DENDY (8).

† *Eospongia varians*, described : SEELY (33) pp. 153, 154.

† *Hindia indianensis*, n. sp., Hamilton group, Indiana ; WHITFIELD (45), p. 299, pl. x, figg. 1-6, Bull. Amer. Mus. xxi.

Petromicu Topsent, defined, p. 104 ; *P. massalis*, n. sp., Gulf of Manaar and W. coast of Ceylon, pp. 104, 105, pl. iv, fig. 5 : DENDY (8).

Taprobane, n. g., might be referred to either *Azoricidae* or *Scleritodermidae*, and necessitates a revision of Sollas's classification of Lithistida, p. 102 : for *T. herdmani*, n. sp., Gulf of Manaar, 9 fathoms, pp. 103, 104, pl. i, fig. 8, pl. iv, fig. 2 : DENDY (8).

(ii) MONAXONIDA.

Monaxonellida, defined and subdivided into *Astromonaxonellida* and *Sigmatomonaxonellida* : DENDY (8) pp. 106, 106.

(a) Order HADROMERINA.

Astromonaxonellida, defined, "practically equivalent to the *Hadromera* with addition of *Chondrosida* : DENDY (8) pp. 106, 107.

Asteropus Sollas, defined, p. 109; *A. haeckeli*, n. sp., Gulf of Manaar, water, pp. 109, 110, pl. v, fig. 3 : DENDY (8).

Axosuberites Tops., to be merged in *Suberites* : DENDY (8) p. 131.

Chondrilla S., defined, p. 132; *C. australiensis* Carter, described, with *lobata*, n. var., pp. 132, 133 : DENDY (8).

Chondrosia Nardo, defined, p. 133; *C. reniformis* Nardo, described, p. DENDY (8).

Cliona Gray, defined : DENDY (8) p. 128.—*C. chilensis*, n. sp., Cal Chili : THIELE (36) pp. 409–412, figg. 28, 29, 36 a–c.—*C. mantifera*, n. sp., Gulf of Manaar : DENDY (8) pp. 128–130, pl. v, fig. 1 text-fig. 2, p. 144.—*C. vastifica* Hanc., described : SVARCHEVSKI pp. 38, 39, pl. iv, fig. 12, pl. vi, fig. 6.

Clionida, defined : DENDY (8) p. 128.

Clionopsis, n. g. for *C. platei*, n. sp., Calbuco, Chili : THIELE pp. 412–414, fig. 37, a–d.

Clithoosia, n. g., *Clionida*, defined (p. 95) for *C. seurati*, n. sp., Manga Gambier Islands : TOPSENT (38).

Coppatias Soll., defined, p. 23; remarks on position, p. 25 : BAER *C.* defined, includes *Stellettinopsis* Carter : DENDY (8) p. 107 *reptans*, n. sp., Cod Bay, Trincomalee, 5 fathoms : DENDY (8) pp. 109, pl. v, fig. 2.—*C. sansibarensis*, n. sp., Zanzibar : BAER (1) p. 24, pl. i, fig. 13, pl. v, figg. 26–30.

Coppatiida Topsent, to be merged in *Epipolasida* Sollas, after removing *Spongosorites* Topsent to *Axinellida* : DENDY (8) p. 107.

Cryptotethya, n. g., *Epipolasida*, for *C. agglutinans*, n. sp., Gulf of Man DENDY (8) pp. 110–112, pl. v, figg. 4, 5.

Donatia Nardo for *Tethya* Autt., defined : BAER (1) p. 26.—*D. papi* n. sp., Calbuco, Chili : THIELE (36) pp. 408, 409, figg. 24, 35 a *D. parvistella*, n. sp., Zanzibar : BAER (1) pp. 27, 28, pl. ii, fig. 9, figg. 35–38.—*D. viridis*, n. sp., Papeete : BAER (1) pp. 26, 27, fig. 8, pl. v, figg. 31–34.

Donatiida, n. nom. for *Tethyida*, defined : BAER (1) p. 26.

Epipolasida Sollas, defined and reinstated to include Topsent's *far Coppatiida*, with the exception of *Spongosorites*, and *Streptaster* DENDY (8) p. 107.

Hymedesmia Bow., defined and characterized : DENDY (8) pp. 119, 1 *H. areolata*, n. sp., Calbuco, 40 m. : THIELE (36) pp. 452, 453, fig. 68 a–d.—*H. curvistellifera*, n. sp., Ceylon seas : DENDY (8) pp. 122, pl. v, fig. 6.—*H. irritans*, n. sp., Juan Fernandez, pp. 455, fig. 71 a–c; *H. laevis*, n. sp., Calbuco, pp. 453, 454, fig. 69 THIELE (36).—*H. stellivarians* Carter, described : DENDY (8) pp. 121.—*H. tenuissima*, n. sp., Calbuco : THIELE (36) pp. 454, fig. 70 a–f.

Kowalevskyella, n. g. for *K. gracilis*, n. sp., Black Sea : SVARCHEVSKI pp. 40, 41, & 53, pl. ii, fig. 7, pl. vii, fig. 2.

Laxosuberites Tops., to be merged in *Suberites* : DENDY (8) p. 131.

Leptosaustra constellata Topsent, position discussed : DENDY (8) p. 134 *Negombo*, n. g., *Spirastrellida*, for *N. tenuistellata*, n. sp., from off Negro 12–20 fathoms : DENDY (8) pp. 127, 128, pl. v, fig. 8.

Placospongia Gray, defined and referred to *Spirastrellida*, p. 126 *carinata* (Bow.), pp. 126, 127 : DENDY (8).

Polynastia isidis, n. sp., Admiralty Sound, 19 m. : THIELE (36) pp. 415, fig. 25, 38 a–e.

- Prosuberites epiphytoides*, n. sp., Juan Fernandez : THIELE (36) p. 420.
- Protosuberites*, n. g. for *P. prototipus*, n. sp., Black Sea : SVARCHEVSKIĖ (35) pp. 36, 37, & 52, pl. vi, fig. 5.
- Spirastrella* O. S., defined : DENDY (8) p. 122; DRAGNEWITSCH (9) p. 13.—*S. lacunosa* Kieschnick, described : DRAGNEWITSCH (9) pp. 13, 14.—*S. tentorioides*, n. sp., Ceylon seas, pp. 125, 126, pl. v, fig. 7; *S. vagabunda* Ridley, described, with four varieties, var. *trincomaliensis* R., var. *tubulodigitata*, n. var., var. *fungoides*, n. var., and var. *gallensis*, n. var., pp. 122–125 : DENDY (8).
- Spirastrellidae*, defined : DENDY (8) p. 119.
- Stellettinopsis* Carter, a synonym of *Coppatias* Sollas : DENDY (8) p. 107.
- Streptasteridae* Topsent, to be merged in *Epipolasidae* Sollas : DENDY (8) p. 107.
- Suberites* Nardo, defined, to include *Axosuberites* Tops. and *Laxosuberites* Tops. : DENDY (8) pp. 130, 131 : characters of the genus : THIELE (36) pp. 415, 416.—*S. cruciatus*, n. sp. from outside Periya Paar, 24 fathoms : DENDY (8) p. 131, pl. v, fig. 10.—*S. (Pseudosuberites) digitatus*, n. sp., Admiralty Sound : THIELE (36) pp. 417, 418, figg. 26, 40 a, b.—*S. domuncula* O.S., described : SVARCHEVSKIĖ (35) pp. 35, 36, pl. ii, fig. 5, pl. iv, fig. 11, pl. vi, fig. 4.—*S. puncturatus*, n. sp., Coquimbo, pp. 419, 420, fig. 42 a–e; *S. ruber*, n. sp., Admiralty Sound, pp. 418, 419, figg. 31, 41 a–d; *S. (Pseudosuberites) sulcatus*, n. sp., Cape Espiritu-Santo, East Tierra del Fuego, p. 417, figg. 27, 39 a–c : THIELE (36).
- Suberitidae*, defined, referred to *Astromonaxonellida* : DENDY (8) p. 130.
- Tethya* Lam., defined : DENDY (8) p. 112.—*T. lyncurium* L., described with three varieties from Ceylon : DENDY (8) pp. 112–114; structure of the spicules : VOSMAER & WIJSMAN (41). (See also *Donatia*, supra.)
- Tethyidae*, defined : DENDY (8) p. 112. [See also II, A.]
- † *Viva* sp. : ZAHÁLKA (48) pp. 22, 159.
- Vosmaeria reticulosa*, n. sp., Iquique : THIELE (36) pp. 423, 424, fig. 45 a–c.
- Xenospongia* Gray, defined and referred to *Tethyidae*, p. 115; *X. patelliformis* Gray, described, pp. 116–119, pl. vi : DENDY (8).
- Yvesia alecto* Topsent, position discussed : DENDY (8) p. 134.

(b) Order HALICHONDRINA.

- Sigmatomonaxonellida, defined as a suborder, and divided into three families, *Haploscleridae*, *Desmacidonidae*, and *Axinellidae*, the affinities of the group discussed : DENDY (8) pp. 133–135. [See also II, A.]
- Acanthella* O. S., defined, p. 193; *A. carteri* Dendy, described, p. 193, pl. viii, fig. 6; *A. flabelliformis* Keller, described, pp. 193, 194 : DENDY (8).
- Acanthorifer*, n. g., allied to *Heteroxya* Topsent, for *A. ceylonensis*, n. sp., Gulf of Manaar, deep water : DENDY (8) pp. 156–158, pl. ix, fig. 5.
- Acarnus* Gray, defined, p. 177; *A. ternatus* Ridley, described, p. 177, pl. viii, fig. 4 : DENDY (8).
- Acervochalina variabilis*, n. sp., Juan Fernandez and Punta Arenas : THIELE (36) pp. 477–479, figg. 17, 33, 96.
- Agelas* Duch. et. Mich., defined, p. 174; *A. ceylonica*, n. sp., Ceylon seas, pp. 174, 175, pl. xii, fig. 9; *A. mauritiana* (Carter), described, p. 174 : DENDY (8).
- Amphiastrella*, see under *Phlaodictyinae*.
- Artemisina* Vosmaer, diagnosis, p. 110, and characters of species, pp. 116, 117; *A. apollinis* (R. & D.), diagnosis and description, pp. 114–116, pl. xiii, fig. 4 a–g; *A. arcigera* (O. S.), diagnosis and description,

- includes *A. suberitoides* Vosmaer & Fristedt, pp. 110-114, pl. 9-11, pl. xiii, fig. 3 a-f; *A. suberitoides* Vosmaer & Fristedt, sy of *A. arcigera* (O. S.), p. 113: LUNDBECK (17).
- Asbestoptuma* Norman, diagnosis and position, pp. 43, 44, criticis systematic survey of species referred to it, pp. 73-78; *A. biham* Carter, diagnosis and description, pp. 51-54, pl. ii, figg. 7, 8, figg. 1 a-g, 2; *A. comata*, n. sp., from eastern slope of the Reyk ridge, 799 fathoms, pp. 72, 73, pl. ii, figg. 22, 23, pl. xii, figg. 1; *A. cupressiformis* Cart., diagnosis and description, includes *E. fristedtii* Lambe, partim, pp. 58-62, pl. ii, figg. 11-14, pl. xi, 1 a-f, 5; *A. furcata*, n. sp., Ingolf, 537 fathoms and 450 fathom East Iceland, pp. 54-57, pl. ii, figg. 9, 10, pl. xi, fig. 3, a-h; *A. n. sp.*, off Iceland, 1010 and 1309 fathoms, pp. 66-68, pl. ii, fig. 19, pl. xi, fig. 8, a-f; *A. infundibulum* Levins., diagnosis and d tion, includes *Esperia cupressiformis* Cart. partim, and *E. atifera* Hansen partim, pp. 68-72, pl. ii, figg. 20-21, pl. xi, fig. 9; *A. lycopodium* Levins., diagnosis and description, includes *A. bihamatifer* Hansen partim, and *Esperella fristedtii* Lambe p pp. 62-66, pl. ii, figg. 15-17, pl. xi, figg. 6, a-d, 7; *A. pen* (O. S.), diagnosis and description, includes *Cladorhiza biham* Vosmaer, *Esperia bihamatifer* Hansen, *Cladorhiza nordens* Fristedt, and *Esperella plumosa* Arnesen, pp. 44-51, pl. ii, fig. pl. x, figg. 4, a-o, 5-7: LUNDBECK (17).
- Aulena* Lend., defined, p. 17; *A. laxa*, var. *digitata* Lend., des p. 17: DRAGNEWITSCH (9).
- Auletta* O. S., defined, p. 194; *A. elongata*, n. sp., Gulf of Manar W. coast of Ceylon, pp. 195, 196, pl. xiii, fig. 7; *A. lyrata* (described, includes *A. aurantiaca* Dendy, with varr. *glomerata* n *crassispiculata* n. var., and *brevispiculata* n. var., pp. 194 DENDY (8).
- Aulospongia* Norman, defined and discussed, p. 176; *A. tubulatus* (p. 176, text-fig. 5: DENDY (8).
- Axinella* O. S., defined; DENDY (8) p. 188.--*A. crinita*, n. sp., Cal THIELE (36) pp. 424-426, fig. 46, a, b.—*A. halichondroides*, Gulf of Manaar, p. 190, pl. xii, fig. 7; *A. labyrinthica* Dendy, p. *A. manus*, n. sp., Gulf of Manaar, pp. 188, 189, pl. xii, 1 *A. tenuidigitata*, n. sp., W. coast of Ceylon, deep water, pp. 188 pl. xiii, fig. 4: DENDY (8).
- Axinellidae*, defined and discussed; DENDY (8) pp. 181, 182.
- Batzella* Topsent, discussed, p. 438; *B. corticata*, n. sp., Juan Fern 30 m., pp. 438, 439, fig. 58, a, b; *B. mollis*, n. sp., Juan Fern pp. 439, 440, fig. 59, a, b: THIELE (36).
- Biemna chilensis*, n. sp., Calbuco: THIELE (36) pp. 434, 435, fig. 5.
- Bubarinæ* to be abolished as a group: DENDY (8) p. 158.
- Bubaris* Gray, defined and discussed, p. 179; *B. eruca* (Carter) p DENDY (8).
- Cacochalina* O. S., defined, p. 23; *C. typica* Lend., described, pp. 2 DRAGNEWITSCH (9).
- Ceraochalina* Lendenfeld, defined, p. 152; *C. ceylonica*, n. sp., C Manaar, pp. 154, 155, pl. vii, fig. 3, pl. x, fig. 6; *C. multiformis* var. *manarensis* Dendy, described, p. 154, pl. vii, fig. 2; *C. retia* n. sp., from off Chilaw, 10 fathoms, pp. 152, 153, pl. x, 1 *C. reticulis*, n. sp., Gulf of Manaar, pp. 153, 154, pl. x, 1 DENDY (8).
- Chalina* Grant, defined, p. 150; *C. clathrata*, n. sp., Gulf of M p. 151, pl. x, fig. 3; *C. cymæformis* (Esper), described, pp. 151, DENDY (8).—*C. fusifera*, n. sp., Punta Arenas: THIELE (36) p 477, figg. 15, 32, 95.—*C. obtusispiculifera*, n. sp., W. coast of (

- and Gulf of Manaar, deep water, p. 150, pl. x, fig. 9; *C. subarmigera* (Ridley), described, p. 150, pl. x, fig. 5: DENDY (8).
- Chalinida*, characters of the family and criticism of the genera: THIELE (36) pp. 472, 473.
- Chalinina* defined, their affinities discussed: DENDY (8) pp. 147, 148.
- Chondrocladia* Wyv. Thomson, diagnosis, p. 102, and list of species, pp. 109, 110: *C. gigantea* (Hansen), diagnosis and description, includes *Cladorhiza grandis* Verrill, *C. nobilis* Frist., *Desmacidon clavatum* Hansen, *D. nucleus* Hansen and *D. arcticum* Hansen, pp. 102-109, pl. iv, fig. 1, pl. xiii, fig. 2, *a-l*: LUNDBECK (17).
- Ciocalyptra* Bow., defined, p. 197; *C. tyleri* Bow., described, with var. *aberrans* n. var., pp. 197-199: DENDY (8).
- Cladocalina* O. S., defined, p. 24; *C. aurantiaca* Lend., described, pp. 24, 25; *C. euplex* Lend., described, p. 24: DRAGNEWITSCH (9).
- Cladorhiza* M. Sars, diagnosis and characters, pp. 78, 79, list of species, pp. 101, 102; *C. abyssicola* M. Sars, diagnosis and description, pp. 79-83, pl. xii, fig. 2, *a-f*; *C. abyssicola* Fristedt, a synonym of *C. ozeata*, q.v., p. 101; *C. abyssicola* Hansen (partim), a synonym of *C. corticocancellata* Cart. and *C. ozeata*, q.v., p. 97; *C. bihamatifera* Vosmaer, a synonym of *Asbestopluma pennatula* (O. S.), q.v., p. 50; *C. corticocancellata* Cart., diagnosis and description, includes *C. abyssicola* Hansen partim, pp. 93-97, pl. iii, figs. 7-9, pl. xii, fig. 6, *a-f*, text-fig. 5; *C. gelida*, n. sp., from the Norwegian Sea and Farøe Channel, 620, 1267, and 1309 fathoms, pp. 83-87, pl. iii, fig. 1, pl. xii, fig. 3, *a-h*, and text-fig. 2; *C. grandis* Verrill, and *C. nobilis* Fristedt, synonyms of *Chondrocladia gigantea* (Hansen) p. 107; *C. iniquidentata*, n. sp., from 63° 13' Lat. N., 6° 32' Long. W., 975 fathoms, pp. 91-93, pl. iii, fig. 6, pl. xii, fig. 5, *a-e*, text-fig. 4; *C. nordenskiöldii* Fristedt, a synonym of *Asbestopluma pennatula* (O. S.), q.v. p. 50; *C. ozeata*, n. sp., includes *C. abyssicola* Hansen (partim) and Fristedt, Denmark Strait and North of Farøe Islands, 330-338 fathoms, pp. 97-101, pl. i, fig. 1, pl. iii, fig. 10, pl. xiii, fig. 1, *a-f*; *C. tenuisigma*, n. sp. from east of Iceland, 762 fathoms, and South Jan Mayen, 1003 fathoms, pp. 87-91, pl. iii, figs. 2-5, pl. xii, fig. 4, *a-e*, and text-fig. 3: LUNDBECK (17).
- Clathria* O. S., defined, to include *Rhaphidophlus* Ehlers: DENDY (8) p. 170.—*C. corallorhizoides* Frist., a synonym of *Lissodendoryx complicata* (Hans.), q.v.: LUNDBECK (17) p. 166.—*C. frondifera* (Bow.), described, includes *C. corallitincta* Dendy, pp. 170, 171; *C. indica* Dendy, p. 171: DENDY (8).—*C. papillosa*, n. sp., Calbuco: THIELE (36) pp. 449, 450, fig. 66, *a-e*.—*C. spiculosa* (Dendy), with var. *rumosa* n. var., and var. *tessellata* n. var.: DENDY (8) pp. 171, 172, pl. viii, fig. 2.
- Collocalyptra*, n. g. *Azinellida*, for *C. digitata*, n. sp., Gulf of Manaar: DENDY (8) pp. 199, 200, pl. vii, fig. 6, pl. xiii, figs. 1, 2.
- Cotylina*, n. subg. of *Asbestopluma*; LUNDBECK (17) p. 68.
- Cyamon* Gray, defined and discussed, pp. 177, 178; *C. quinquerradiatum* (Carter), described, p. 178: DENDY (8).
- Dendrocella*, n. g. for *Dumiria* Topsent nec Keller, diagnosis, characters and list of species, pp. 126, 127; *D. obesichela*, n. sp. from the eastern slope of the Reykjanes-ridge, 799 fathoms, pp. 130, 131, pl. xiv, fig. 2, *a-d*; *D. rhopalum*, n. sp. from Denmark Strait, south of Greenland, and Davis Strait, 1135-1695 fathoms, pp. 127-130, pl. iv, figs. 4, 5, pl. xiv, fig. 1, *a-e*: LUNDBECK (17).
- Dendrocinara*, to be abolished as a group: DENDY (8) p. 158.
- Dendoryx* Gray, defined, p. 21; *D. inaequalis*, n. sp., Papeete, p. 21, pl. i, fig. 12, pl. v, figs. 15-19: BAER (1).—*D. incrustans* var. *viscosa* Tops., a synonym of *Myzilla rosacea* (Liebk.), q.v.: LUNDBECK (17) p. 140.—

- D. simplex*, n. sp., Cape Town; BAER (1) pp. 21, 22, pl. ii, fig. 7, pl. v, fig. 20-25.
- Desmacella* O. S., defined, p. 155; *D. tubulata*, n. sp., Gulf of Manaar, pp. 155, 156, pl. ix, fig. 4: DENDY (8).
- Desmacellina*, defined: DENDY (8) p. 155.
- Desmacidon arctica* Hansen, *D. clavatum* Hansen and *D. nucleus* Hans., synonyms of *Chondrocladia gigantea*, q.v.: LUNDBECK (17) pp. 106, 107.—*D. ceratosa* (R. & D.), described: THIELE (36) pp. 435, 436, fig. 56, a, b.—*D. clavellata* Arnesen, a synonym of *Homæodictya flabelliformis* (Hans.), q.v.: LUNDBECK (17) p. 120.—*D. delicata*, n. sp., Admiralty Sound, 19 m., p. 435, figg. 1, 55, a, b; *D. platei*, n. sp., Juan Fernandez, pp. 436-438, fig. 57, a-c: THIELE (36).
- Desmacidonidae*, defined, with subfamilies *Esperellina*, *Phlæodictyina*, and *Ectyonina*: DENDY (8) p. 158.—*D.*, divided into *Mycalina* and *Ectyonina*; the *Mycalina* divided into two groups, *Mycalæ* (= *Esperellina*) and *Myxillæ* (= *Dendorycina*): LUNDBECK (17).
- Echinodictyum* Ridley, defined, p. 175; *E. clathratum*, n. sp., Ceylon Seas, pp. 175, 176, pl. xi, fig. 4: DENDY (8).
- Ectyonina*, defined: DENDY (8) p. 168.
- Ephydatia mülleri*, see III, A, β.
- Esperella* Vosmaer (seu *Esperia* O. S.), defined: DENDY (8) p. 159; DRAGNEWITSCH (9) p. 14: *E.*, to be replaced by *Mycalæ* Gray: LUNDBECK (17) p. 7; *E.*, defined: SVARCHEVSKIĖ (35) p. 24.—*E. bellabellensis*, n. sp., coast of British Columbia, 300 fathoms: LAMBE (16).—*E. bihamatifera* Hansen, a synonym of *Asbestopluma pennatula* (O. S.), *A. lycopodium* Levins., and *A. infundibulum* Levins., qq.v.: LUNDBECK (17) pp. 50 and 65.—*E. crassissima*, n. sp., Ceylon Seas: DENDY (8) pp. 160, 161, pl. xi, fig. 6.—*E. foraminosa* O. S.: SVARCHEVSKIĖ (35) p. 28.—*E. fristedtii* Lambe, two of the three specimens are *Asbestopluma cupressiformis* Cart., q.v., the third is *A. lycopodium* Levins., q.v.: LUNDBECK (17) p. 62.—*E. intermedia* Vauhoffen (non Schmidt) to be *Mycalæ thaumatocheila*, q.v.: LUNDBECK (17) p. 40.—*E. iophon*, n. sp., Black Sea: SVARCHEVSKIĖ (35) pp. 27, 28 and 51, pl. ii, fig. 6, pl. iv, fig. 7, pl. v, fig. 5.—*E. lanugo* O. S., a synonym of *Mycalæ ovulum* (O. S.), q.v.: LUNDBECK (17) p. 37.—*E. lorenzii* O. S., described, pp. 25-27, pl. iv, fig. 8, pl. v, fig. 3; *E. modesta* O. S., p. 28: SVARCHEVSKIĖ (35).—*E. murrayi* R. & D., described: DRAGNEWITSCH (9) pp. 14, 15.—*E. muscoidea* Tschern., described: SVARCHEVSKIĖ (35) pp. 24, 25, pl. v, fig. 4.—*E. nigricans* Frist., a synonym of *Iophon piceus* (Vosm.), q.v.: LUNDBECK (17) p. 179.—*E. parishii* Ridley, described: DENDY (8) p. 159.—*E. pattersoni* Frist. nec Bow., a synonym of *Iophon dubius* (Hans.), p. 183; *E. picea* Levinsen non Vosmaer, a synonym of *Iophon frigidus*, n. sp., p. 183: LUNDBECK (17).—*E. plumosa* Carter, described: DENDY (8) pp. 159, 160.—*E. plumosa* Arnesen, a synonym of *Asbestopluma pennatula* (O. S.), q.v.: LUNDBECK (17) p. 50.—*E. serratohamata* Carter, to be type of *Paræesperella*, q.v.: DENDY (8) p. 162.—*E. stolonifera* Merejk., a synonym of *Mycalæ ovulum* (O. S.), q.v.: LUNDBECK (17) p. 37.—*E. tenuispiculata*, n. sp., Ceylon Seas; DENDY (8) pp. 161, 162.—*E. vosmaeri* Levinsen, a synonym of *Mycalæ lingua* (Bow.), q.v.: LUNDBECK (17) p. 34.
- Esperellina*, defined: DENDY (8) p. 159.
- Esperiopsis* Carter, diagnosis, characteristics, and list of species: LUNDBECK (17) pp. 7-9; *E.*, discussed: THIELE (36) p. 440.—*E. edwardii* (Bow.), described: THIELE (36) pp. 441, 442.—*E. flagellum*, n. sp., Ingolf, 316 fathoms, pp. 20-22, pl. ix, fig. 1, a-k; *E. forcipula*, n. sp., Davis Strait, 80-100 fathoms, pp. 17-20, pl. i, fig. 5, pl. viii, fig. 5, a-i; *E. modesta* Lambe, a synonym of *Mycalæ ovulum* (O. S.), q.v., p. 38:

- E. normani* (Bow.), diagnosed and described, pp. 12-15, pl. viii, fig. 2, *a-d*; *E. pedicellata*, n. sp., Davis Strait, 393 fathoms, pp. 16, 17, pl. i, fig. 2, pl. viii, fig. 4, *a-c*: LUNDBECK (17).—*E. rugosa*, n. sp., Calbuco: THIELE (36) pp. 440, 441, fig. 60, *a, b*.—*E. typichela*, n. sp., East Greenland, 50-90 fathoms, pp. 22, 23, pl. i, fig. 3, pl. ix, fig. 2, *a-c*, & 4; *E. villosa* Carter, diagnosed and described, pp. 9-13, pl. i, fig. 4, pl. viii, fig. 1, *a-i*; *E.*, sp. described, p. 15, pl. viii, fig. 3, *a-c*: LUNDBECK (17).
- Euchalina* Lend., defined, p. 27; *E. typica* Lend., described: DRAGNEWITSCH (9) p. 27.
- Eurypon miniaceum*, n. sp., Calbuco, 30 m.: THIELE (36) pp. 446, 447, fig. 64, *a-f*.
- Euspongilla lacustris*, see III, A, β .
- Forcepia* Carter, diagnosis, p. 198, characters of species, pp. 210, 211; *F. fabricans* (O. S.), diagnosis and description, includes *Forcipina bulbosa* Vosm., pp. 201-204, pl. xix, fig. 3, *a-g*; *F. forcipis* (Bow.), diagnosis and description, pp. 198-201, pl. xix, fig. 2, *a-h*; *F. grænländica* Frist., diagnosis and description, pp. 209, 210, pl. xx, fig. 3, *a-e*; *F. thielei*, n. sp., from south of Iceland, 350 and 480 fathoms, pp. 206-209, pl. vii, figg. 1, 2, pl. xix, fig. 5, *a-f*; *F. topsentii*, n. sp., from between Jan Mayen and Iceland, 1010 and 1309 fathoms, pp. 204-206, pl. vii, fig. 3, pl. xix, fig. 4, *a-g*: LUNDBECK (17).
- Forcipina bulbosa* Vosmaer, a synonym of *Forcepia fabricans* (O. S.), q.v.: LUNDBECK (17) p. 204.
- Gelliina*, subfamily of *Haplosclerida*, defined: DENDY (8) p. 136.
- Gelliodes* Ridley, defined: DENDY (8) p. 137; DRAGNEWITSCH (9) p. 19.—*G. carnosa* Dendy, described, p. 137, pl. vii, fig. 5; *G. incrustans*, n. sp., Gulf of Manaar, pp. 137, 138, pl. ix, fig. 6; *G. petrosioides*, n. sp. and var. *fibrosa*, n. var., West Coast of Ceylon, deep water, pp. 138, 139, pl. ix, fig. 3: DENDY (8).—*G. spinosella* Thiele, described: DRAGNEWITSCH (9) p. 19.
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- Haplosclerida*, defined and characterized: DENDY (8) pp. 135, 136.
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- Hymeniacion* Bow., defined, includes *Stylotella* Lend.: DENDY (8) pp. 185, 186.—*H.* Bow., discussed, referred to Clavulida: THIELE (36) p. 421.—*H. fernandesi*, n. sp., Juan Fernandez: THIELE (36) pp. 422, 423.—*H. petrosioides*, n. sp., Ceylon Seas: DENDY (8) p. 186, pl. xii, fig. 4.—*H. rubiginosa*, n. sp., Iquique: THIELE (36) pp. 421, 422, fig. 44.
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- Iotrochota* Ridley, defined: DENDY (8) p. 164.—*I.*, diagnosis, p. 185, and characters of species, pp. 196-198: LUNDBECK (17).—*I. abyssi* (Cart.), diagnosis and description, pp. 188, 189, pl. xviii, fig. 3, *a-d*; *I. affinis*, n. sp. from East Coast of Greenland, pp. 194, 195, pl. xviii, fig. 8, *a-e*: LUNDBECK (17).—*I. baculifera* Ridley, described: DENDY (8) p. 165.—*I. dubia*, n. sp. from Denmark Strait, 767 fathoms, pp. 189, 190, pl. xviii, fig. 4, *a-f*; *I. intermedia*, n. sp. from between Iceland and the Faroes, 115 fathoms, pp. 190, 191, pl. xviii, fig. 5, *a-d*; *I. axata*, n. sp. from Denmark Strait and east of the Faroes, pp. 186-188, pl. vi, fig. 6, pl. xviii, fig. 2, *a-f*; *I. polydentata*, n. sp. from the Faroes and north of Iceland, pp. 192-194, pl. vi, fig. 7, pl. xviii, fig. 7, *a-e*: LUNDBECK (17).—*I. purpurea* (Bow.), described: DENDY (8) p. 164.—*I. rotuluncora*, n. sp. from east coast of Greenland, 94 fathoms, pp. 191, 192, pl. xviii, fig. 6, *a-g*; *I. spinosa*, n. sp. from 69° 31' N. Lat. 7° 06' W. Long. 1309 fathoms, pp. 195, 196, pl. vi, fig. 8, pl. xix, fig. 1, *a-e*: *I. viridens*, n. sp. from Denmark Strait and south of the Faroes, pp. 185, 186, pl. xviii, fig. 1, *a-e*; LUNDBECK (17).
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- Leucophloeus* Carter, defined and discussed: DENDY (8) pp. 196, 197.—*L. fatidus* (Dendy), described: DENDY (8) p. 197.
- Lissodendoryx* Tops., defined: BAER (1) p. 22.—*L.*, diagnosis and characters of species: LUNDBECK (17) pp. 153, 154.—*L. complicata* (Hana.), diagnosis and description, includes *Myzilla grisea* Hana. and *Clathria corallorhizoides* Frist., pp. 166-169, pl. v, fig. 11, pl. xvi, 4, *a-g*; *L. diversichela*, n. sp. from Denmark Strait and West Coast of Norway, 170-788 fathoms, pp. 160-162, pl. v, fig. 9, pl. xvi, fig. 2, *a-h*; *L. fragilis* (Frist.), diagnosis and description, pp. 158-160, pl. v, fig. 7, 8, pl. xvii, fig. 1, *a-g*; *L. indistincta* (Frist.), diagnosis and description, pp. 162-165, pl. v, fig. 10, pl. xvi, fig. 3, *a-h*; *L. lobosa*, n. sp. from Denmark Strait and Davis Strait, 393 and 788 fathoms, pp. 154-156, pl. v, fig. 5, pl. xv, fig. 4, *a-c*: LUNDBECK (17).—*L. monticularis*, n. sp., Zanzibar: BAER (1) pp. 22, 23, pl. ii, fig. 6, pl. v, fig. 9-14.—*L. sophia* (Frist.), diagnosis and description, pp. 156-158, pl. v, fig. 6, pl. xv, fig. 5; *L. stipitata*, n. sp., off Iceland, 275-975 fathoms, pp. 170-173, pl. v, fig. 13, pl. xvii, fig. 2, *a-e*; *L. vicina*, n. sp. from Denmark Strait, 1566 fathoms, pp. 169, 170, pl. v, fig. 12, pl. xvii, fig. 1, *a-f*: LUNDBECK (17).
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- Siphonochalina* O. S., defined: BAER (1) p. 15: DENDY (8) p. 155.—*S. communis* (Carter), var. *tenuispiculata*, n. var., DENDY (8) p. 155, pl. vii, fig. 1.—*S. intermedia* R. & D., described: BAER (1) pp. 16, 17, pl. ii, fig. 2, pl. iv, fig. 25.
- Spongosorites* Topsent, defined, placed under *Axinellidae*, p. 182: *S. (?) lamellata*, n. sp., W. coast of Ceylon, pp. 184, 185, pl. xii, fig. 2.—*S. (?) lapidiformis*, n. sp., W. coast of Ceylon, p. 185, pl. xii, fig. 3.—*S. topsenti*, n. sp., Gulf of Manaar and W. coast of Ceylon, pp. 182-184, pl. xii, fig. 1: DENDY (8).
- Strongylophora*, n. g., *Gelliinae*, for *S. durissima*, n. sp., Ceylon seas: DENDY (8) pp. 141, 142, pl. ix, fig. 1.
- Stylopus* Frist., defined, p. 31: *S. coriacus* Frist., described, pp. 31, 32, pl. vi, fig. 3: SVARCHEVSKIĖ (35).

Stylotella Lend., see under *Hymeniacidon*.

Stylotellopsis n. g., for *S. amabilis*, n. sp., Punta Arenas, 19 m.: THIELE (36) pp. 456, 457, fig. 72, a-d.

Tedania Gray, defined: BAER (1) p. 17; *T.* discussed: THIELE (36) p. 430.—*T. digitata* O. S., var. *sansibarensis*, n. var., pp. 17, 18, pl. i, figg. 11, pl. iv, figg. 26-31, pl. v, fig. 1, 2: var. *fragilis*, n. var., pp. 18, 19, pl. ii, fig. 3: var. *conica*, n. var., p. 19, pl. ii, fig. 4: BAER (1).—*T. excavata*, n. sp., Calbuco, pp. 431, 432, fig. 51, a-c; *T. fuegiensis*, n. sp., Cape Espiritu Santo, pp. 433, 434, fig. 53, a-d; *T. mucosa*, n. sp., Calbuco, pp. 430, 431, fig. 50, a-c; *T. pectinicola*, n. sp., Calbuco, p. 432, fig. 52, a-d: THIELE (36).

Thrinacophora R. & D., defined, p. 186; *T. agariciformis*, n. sp., Ceylon seas, pp. 186, 187, pl. xii, fig. 6; *T. durissima*, n. sp., Ceylon seas, pp. 187, 188, pl. xii, fig. 5: DENDY (8).

Torochalina Ridley, defined and characterized, p. 139; *T. robusta* R., and var. *ridleyi*, n. var., described, pp. 139-141, pl. ix, fig. 2: DENDY (8).

Trachypsis, n. g., *Renierina*, for *T. halichondroides*, n. sp., W. coast of Ceylon, deep water: DENDY (8) p. 147, pl. x, fig. 10.

(iii) KERATOSA.

Classification of the Keratosa discussed: TOPSENT (37) pp. clxxi-clxxiii.

Keratosa distinguished into "true Ceratosa" or Euceratosa and Pseudoceratosa, p. 201: Euceratosa defined, their affinities discussed, pp. 200-203: DENDY (8).

Aplysilla lendenfeldi, n. nom., for *Simplicella glaciulis* Lend., non Merejkowsky, pp. 489, 490, fig. 113; *A. sulfurea* F. E. S., described, pp. 488, 489, figg. 112, 114: THIELE (36).

Aplysillidae, defined: DENDY (8) p. 203; to be merged in *Darwinellidae*: TOPSENT (37) p. clxxiii.

Aplysina Nardo, defined, p. 223; *A. herdmanni*, n. sp., Ceylon seas, pp. 225, 226, pl. xvi, fig. 4; *A. purpurea* Carter, described, pp. 224, 225: DENDY (8).

Cacospongia O. S., defined, p. 210; *C. scalaris* O. S., described, pp. 210, 211: DENDY (8).—*C. similis* n. sp., Juan Fernandez: THIELE (36) pp. 481, 482, fig. 108.

Cerelasma Haeckel, referred to the *Peanminidae* (Protozoa): SCHULZE (31) p. 5.

Darwinella Muller, defined and discussed: DENDY (8) p. 203; defined, p. cxc; table of species, p. clxxiii: TOPSENT (37).—*D. australiensis* Carter, described, p. clxxvi; *D. cornuostellata* (Carter), described, pp. clxxv, clxxvi; *D. dalmatica*, n. sp., Adriatic, pp. clxxviii, clxxix; *D. duplex*, n. sp., Azores, 200 metres, p. clxxix; *D. gardineri*, n. sp., Maldives, 40 metres, pp. clxxix, clxxx; *D. intermedia* Topsent, described, pp. clxxvii, clxxviii, text-fig. 1; *D. mulleri* (Schultze), for *D. aurea* Müller, described, p. clxxv: TOPSENT (37).—*D. simplex* Topsent, described: DENDY (8) p. 204, pl. xv, figg. 1, 2; described: TOPSENT (37) pp. clxxvi, clxxvii.—*D. warreni*, n. sp., Natal: TOPSENT (37) pp. clxxx-clxxxiv.

Darwinellidae, defined, for *Hexadella* Tops., *Aplysilla* F. E. S., *Darwinella* Müll., *Dendrilla* Lend. and *Megalopastus* Dendy: TOPSENT (37) pp. clxxiii and clxxxix.

Dendrilla Lend., defined, referred to family *Darwinellidae*: TOPSENT (37) pp. clxxiv and cxc.

Dendroceratida, for *Hexaceratina* Lend., defined, to include three families, *Darwinellidae*, *Pteraplysillidae*, n. fam., and *Ianthellidae*: the *Hali-sarcidae* to be removed from the order: TOPSENT (37) pp. clxxiii and clxxxix.

- Euspongia* Bronn, defined: DENDY (8) p. 211: DRAGNEWITSCH (9) p. 27.—*E. officinalis* Auct., var. *ceylonensis*, n. var.: DENDY (8) pp. 211–213, pl. xiv, fig. 3, pl. xvi, fig. 5.—*E. officinalis*, var. *adriatica* F. E. S., and var. *rotunda* Hyatt, described: DRAGNEWITSCH (9), pp. 28–30.—*E. tenuiramosa*, n. sp., Trincomalee: DENDY (8) pp. 213, 214.—*E. zimorra* O. S., described: DRAGNEWITSCH (9) p. 28.—(Vide etiam *Spongia*.)
- Haddonella* I. Soll., defined, referred to family *Ianthellidae*: TOPSENT (37) pp. clxxxix, cxc.
- Hexaceratina* Lend., discussion of their affinities: THIELE (36) p. 488.
- Hippospongia* F. E. S., defined: DENDY (8) p. 214: DRAGNEWITSCH (9) p. 30.—*H. anomala* Polej., described, pp. 215, 216; *H. clathrata* (Carter), described, p. 215, pl. xiv, fig. 2; *H. dura* Lend., described, p. 216; *H. intestinalis* (Lam.), described, p. 214: DENDY (8).—*H. equina* and var. *macandriformis* in Western Australia, economic notes on: WHITELEGGE (44) p. 119.—*H. mollissima* Lend., described: DRAGNEWITSCH (9) p. 30.
- Hircinia* Nardo, defined, p. 219; *H. anomala*, n. sp., Gulf of Manaar, pp. 222, 223, pl. xiv, fig. 5, pl. xvi, fig. 1: DENDY (8).—*H. clavata*, n. sp., Juan Fernandez: THIELE (36) pp. 484, 485, fig. 110.—*H. fusca* Carter, non *H. fusca* Ridley and Lendenfeld, described, pp. 219–221, pl. xiv, fig. 1; *H. schulzei* n. sp., W. coast of Ceylon, pp. 221, 222, pl. xvi, fig. 3; *H. tuberosa*, n. sp., W. coast of Ceylon, p. 221, pl. xvi, fig. 2: DENDY (8).—*H. variabilis hirsuta* O. S., described: THIELE (36) p. 484, fig. 109.
- Ianthella* Gray, defined, referred to family *Ianthellidae*: TOPSENT (37) pp. clxxxix, cxc.
- Ianthellidae*, defined, for *Ianthella* Gray, and *Haddonella* I. Soll.: TOPSENT (37) pp. clxxxiii and cxc.
- Igernella*, n. g., *Pleraplysellidae*, defined, p. cxc, for *Darwinella joyeuxi* Topsent, described: TOPSENT (37) pp. clxxxvii–clxxxix, text-fig. 3.
- Korotnewia* Poléj., to be removed from the *Darwinellidae* and from the *Dendroceratida*, perhaps allied to *Psammaplysia* Keller: TOPSENT (37) p. clxxiv.
- Megulopustas* n. g., *Aplysellidae*, for *Dendrilla elegans* Lend. and *Spongionella nigra* Dendy; diagnosed and discussed, pp. 204, 205; *M. nigra*, described, pp. 205, 206, pl. xiv, fig. 7, pl. xv, figs. 5–8; *M. pulvillus* n. sp., Gulf of Manaar, pp. 206, 207, pl. xv, fig. 3: DENDY (8).—*M. Dendy*, defined, referred to family *Darwinellidae*: TOPSENT (37) pp. clxxiv and cxc.
- Oligoceras arenosa*, n. sp., Juan Fernandez, pp. 479, 480; *O. paupera*, n. sp., Juan Fernandez, p. 481; *O. sororia*, n. sp., Juan Fernandez, 3 m., pp. 480, 481: THIELE (36).
- Phyllospongia* Ehlers, defined, p. 217; *P. holdsworthi* (Bow.), described, pp. 218, 219, text-fig. 5; *P. papyracea* (Esper) var., described, pp. 217, 218, pl. xiv, fig. 6: DENDY (8).
- Pleraplysia*, n. g., *Pleraplysellidae*, defined, p. cxc, for *P. minchini*, n. sp., Courseulles (Calvados), 30 metres: TOPSENT (37) pp. clxxxiv–clxxxvii, text-fig. 2.
- Pleraplysellidae*, n. fam., for *Igernella*, n. g. and *Pleraplysia*, n. g., defined: TOPSENT (37) pp. clxxxiii and cxc.
- Pramniidae*, Haeckel, referred to the Protozoa; SCHULZE (31) pp. 4, 5.
- Prammopemma*, Marshall, defined; *P. crassum* (Carter), var. *clathrata*, n. var.: DENDY (8) p. 210.
- Prammophyllum* Haeckel, to be merged in the genus *Stannophyllum* and referred to the family *Stannomidae* (Protozoa): SCHULZE (31) p. 5.
- Sponyelia* Nardo, defined: DENDY (8) p. 208: DRAGNEWITSCH (9) p. 19.—*S. chilensis*, n. sp., Calbuco, 19.–28 m.: THIELE (36) pp. 485, 486, fig. 20.—*S. elastica*, var. *lobosa* F. E. S., and *crassa*, n. var.: DENDY

(8) pp. 208, 209, pl. xiv, fig. 4—*S. elastica*, var. *massa* F. E. S., described: DRAGNEWITSCH (9) pp. 20, 21.—*S. fragilis* Mont., var. *ramosa* F. E. S., described: DENDY (8) p. 208.—*S. fragilis*, var. *tubulosa* F. E. S., described: DRAGNEWITSCH (9) p. 20.—*S. incrustata*, n. sp., Gulf of Manaar and W. coast of Ceylon: DENDY (8) pp. 209, 210.—*S. repens*, n. sp., Juan Fernandez: THIELE (36) pp. 486-488, fig. 111.

Spongiellida, defined: DENDY (8) p. 207.

Spongia for *Euspongia*, p. 482; *S. cerebralis*, n. sp., Juan Fernandez, pp. 482, 483, figg. 19, 107; *S. magellanica*, n. sp., Punta Arenas and Calbuco, pp. 483, 484, figg. 18, 106: THIELE (36).

Spongida, defined: DENDY (8) p. 210.

Stannomida Haeckel, referred to the Protozoa: SCHULZE (31) pp. 4, 5.

(iv) MYXOSPONGIDA.

Definition of the Myxospongida, to include *Halisarca*, *Bajulus*, *Hexadella*, and *Oscarella*, their affinities discussed: DENDY (8) p. 60.

Halisarca dujardini, var. *magellanica* Tops., described: THIELE (36) p. 490.

E. INCERTÆ SEDIS.

†*Achilleum rugosum*, var. *elliptica*: ZAHÁLKA (48) pp. 21, 168.

†*Amorphospongia rugosa* Röm.: ZAHÁLKA (48) pp. 159, 183.

Hexadella Topsent, defined, referred to *Myxospongida*: DENDY (8) p. 61: regarded as derived from *Aplysilla* by loss of skeleton, and referred to *Darwinellida*: TOPSENT (37) pp. clxiv and exc.—*H. indica* n. sp., Gulf of Manaar, 5 fathoms: DENDY (8) pp. 61-63, pl. i, figg. 1-3.

†*Leiofungia*, cf. *reticularis* (Münst.): BLASCHKE (3) p. 165.

†*Somphospongia favositiformis*, n. sp., Hamilton Group, Indiana, WHITFIELD (45) p. 300, pl. ix, figg. 1-9, Bull. Amer. Mus. xxi.

†*Sparsispongia* (?) sp.: BLASCHKE (3) p. 164.

†*Spongites saxonicus*: ZAHÁLKA (48) p. 56.

†*Strephochetus*, and *S. ocellatus*, described, p. 156, pls. lvi, lvii, lix; *S. brainerdi*, pl. lvi, fig. 2, pl. lvii, fig. 8, p. 156, *atratus*, pl. lvi, fig. 1, pl. lvii, fig. 9, p. 157, Beekmantown calciferous, Vermont, *richmondensis*, Kentucky and Indiana (MILLER) p. 157, *prunus*, Vermont, pl. lvi, fig. 5, pl. lvii, fig. 6, p. 160: SEELY, Rep. Vermont State Geol. iii, n. spp.

†*Vermispongia*, n. g., *V. hamiltonensis*, n. sp., figg. 1-5; *dactyliformis*, n. sp., fig. 6, pl. xi, Hamilton Group, Indiana, WHITFIELD (45) p. 296, Bull. Amer. Mus. xxi.

XVIII. PROTOZOA.

BY

H. M. WOODCOCK, D.Sc. (Lond.).

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INTRODUCTION.

THE *Protozoa* Record for 1905 is indeed a "record," containing no fewer than 522 Titles; this is an increase of quite 40 per cent. upon last year, and surpasses the previous best year (1903) by about 60 titles. And while of course, as is usual, a certain number belong actually to preceding years (chiefly to 1904), the Recorder does not find that the proportion of such in the present Record is so great as he anticipated would be the case a year ago.

Analysis of the Titles shews that this considerable increase is—as hitherto—largely due to the never-ceasing growth of the literature dealing with parasitic Protozoa and their relation to disease. In connection with this subject, the Recorder would like to remark that he is sure no other Recorder can have so much trouble and difficulty in deciding what papers to include and what to leave out, as falls to his lot. If he compares his list with the Titles given, say, in the Zool. Jahresbericht, he finds his own is much longer; if, on the other hand, he compares it with the literature-lists (relating solely to Protozoa and "Pseudo-Protozoa") published in the Arch. Protistenkunde, he notes dozens of medico-biological papers which he has not included. To take one instance only: that of the "*Spirochæta*" of syphilis. Upon the answer to the question whether this organism is or is not a Protozoan, ought to depend the inclusion or non-inclusion of—well, of how many papers, the Recorder does not care to estimate! For this year, at all events, it has been considered best to leave them practically out of account, pending further discoveries; though the Recorder is by no means oblivious of KRZYSZTALOWICZ & SIEDLECKI's remarkable account (223), in which alleged trypaniform (Flagellate) phases of this parasite are described. Apart from this work, only SCHAUDINN & HOFFMANN's note regarding the discovery (406), and one or two notes (VUILLEMIN [498], SCHAUDINN [403 & 404]) bearing principally upon the nomenclature, are included.

So far as Morphology and Life-History are concerned, 1905 has proved a less exciting year than the previous one, though nevertheless fairly productive. Among the Gymnomyxa (or Sarcodina), an outstanding feature is the discovery by SCHULZE (431), as the result of his investigations upon certain families of Hæckel's deep-sea Ceratosa, that they are not Sponges but plasmodium-forming Protozoa, which he erects into a special group, the *Xenophyophora*, allied to the Rhizopoda and characterized by their utilisation of extrinsic foreign bodies (e.g. sponge spicules) to form a skeleton. A good deal of work has been done upon various species of *Amæba*, chiefly by NERESHEIMER (312), PENARD (335), SCHUBOTZ (427) and VAHLKAMPF (492). LISTER (267) continues his valuable research upon dimorphism in the Foraminifera, treating in this paper of the relation in size of the megalosphere to that of the microspheric and megalospheric tests in *Nummulites*; and DOUVILLÉ (110) offers an interesting note on the structure of *Orbitolina*. In the morphology of the arenaceous Foraminifera KEMNA has a wide field over which to range,—of which he avails himself (207); it may also be remarked that variety of topic is no obstacle to this versatile writer. An admirable example of the combination of a morphological with a biological study is furnished by HÄCKER's work (169 & 170) on the comparative structure of the Tripyllarian skeleton in relation to function and environmental conditions. Another important Radiolarian memoir is that of BRANDT (39) who has continued his study of the *Collidae*, supplying this time additional information regarding the structure and life-history of the *Thalassocolle*.

There are several interesting Sporozoan papers to record; though the Coccidia have been almost neglected. Led by his observation (43) of slight anisogamy in the conjugating elements of certain Monocystid Gregarines to reinvestigate the common *Monocystis* itself, BRASIL (44) finds that the sexual process in this genus is not, as hitherto thought, completely isogamous, but that distinctions between the male and female gametes really exist. On the other hand, SCHNITZLER (416) confirms the results obtained by previous workers, with regard to the complete isogamy in *Clepsydrina* (*Gregarina*) *ovata*, a Septate form. LÉGER (248) has discovered a remarkable Gregarine, having its cytoplasm metamerically segmented, which he terms *Teniocystis*. The investigation of this undoubtedly unicellular animal leads Léger to put forward the interesting suggestion that harmonic metamerism may be, in certain cases, the cause rather than the expression of repeated (asexual) multiplication (cf. *Anoplophrya*). The occurrence of Hemogregarines in Mammals, described by BALFOUR (7), CHRISTOPHERS (86), and LAYERAN (227), helps to break down still further the division formerly erected between the Hemosporidia of warm- and of cold-blooded Vertebrates. Rogers' sensational observation of Flagellate phases in connection with the extra-corporeal development of *Piroplasma donovani* has been amply corroborated and extended by CHRISTOPHERS (85), LEISHMAN & STATHAM (253) and others; though, so far, no true trypaniform phases have been recognized. KOCH (214) gives an account of what he thinks are developmental stages of *Piroplasma canis* in the tick, but some of the weird appearances figured are not very convincing. Coming to the other sub-class of Sporozoa, the Neosporidia (or, as they are better termed, the Endospora), PEREZ's notes (341-344) on certain new *Glugeide* are of considerable importance as regards the classification of the *Microsporidia*; and CAULLERY & MESSIL (72) publish a detailed account of their researches on the Actinomyxidian, *Sphaeractinomyxon*. HESSE (177, 179) has observed a new species of the uncommon form *Myxocystis*, which he finds to be a true Myxosporidian. Lastly, the number of Sporozoa incertæ sedis is increased by KRASSILTSCHIK's account (220 & 221) of *Microklossia*, which seems to combine to a certain extent Ectosporan and Endosporan characters.

Of numerous papers dealing with the Trypanosomes, PROWAZEK's study (362) on the life-history of *Trypanosoma lewisi* is the most important from a protozoological standpoint; the author demonstrates that the life-cycle of this well-known Mammalian form agrees with that of the Trypanosomes of other Vertebrates so far as investigated up to the present, in possessing a true Invertebrate host (a louse, *Hematopinus*, in this case), in which the sexual conjugation is undergone. FOA (141) has continued his—the Recorder apologizes if he should write her—researches on unusual Flagellates and describes two entirely new types, one, *Calonympha*, being of extremely complicated structure. Miss ROBERTSON's very useful account (379) of the remarkable parasite, *Pseudosporu volucris*, illustrates well to what an extent form-polymorphism may be shown during different periods in the life-history of a given Protozoan. A comprehensive description of the morphology and variation of the lorica in the Peridinida is given by ENTZ (122).

FAURÉ-FREMIET has again taken a prominent share in the work on the Ciliates. In his principal memoir (137) he combines much that he has previously written upon the cytology of the *Vorticellidae*; and other information on the same subject is contained in (128, 131 & 132). In (138), it may be noted, this writer gives a full account of the minute cytoplasmic structure of the Rhizopod *Cochliopodium*. Further papers on the various organellæ of Infusoria are those of GONDER (160), RRSO & DI MAURO (389 & 390), SCHUBERG (419), and TRON (491).

Some interesting contributions on topics of a more general character

may be noticed. MESNIL (394) summarizes our present knowledge relating to the nuclear organelles known as chromidia, distinguishing between the different kinds; and SIEDLECKI (444) discusses at length the significance of the characteristic Sporozoan karyosome. SCHAUDINN (403) and STEMPELL (472) compare the different modifications of the sexual process met with among the Protozoa, the former considering also the relation between the trophic (vegetative) and generative (sexual) nuclear constituents in the different cases. In connection with the physiology of conjugation, CALKINS (61), who is continuing his valuable research on recuperation upon new lines, expresses the quite unexpected idea that not both the ex-conjugants (in e.g., *Paramæcium*) are recuperated.

Another Transatlantic worker to whom Protozoan Physiology is greatly indebted is JENNINGS; in (197) he publishes one of the most thoughtful and philosophical contributions to the study of the behaviour of the lower organisms that has appeared for some time. The logical conclusion to which he finds himself bound to come as the result of his manifold experiments, is that "neither the usual movements, nor the reactions to different stimuli, of *Amæba* (as a type of living protoplasm) have as yet been resolved into known physical factors." It is very instructive to compare with this monograph RHUMBLER's efforts (376) to develop satisfactorily his mechanical theory of movement in *Amæba*, by surface-tension, an explanation which Jennings emphatically says will not suffice; and, in the end, Rhumbler himself briefly makes the significant admission, that a "Miniaturpsyche"—a form of energy of unknown character—may perhaps reside in the *Amæba*, though he deprecates the idea of its being necessarily metaphysical. Nevertheless, it would seem from this that Rhumbler, also, is really, at the end of his labours, no wiser as to the ultimate source of vital phenomena than he was at the beginning. In this section the Recorder has only to add that there is no end to investigations endeavouring to ascertain the effects of all the "taxies" and "tropisms" upon Protozoa; indeed, what the *Zeitschrift allg. Physiol.*, for example, would do, were there no hapless *Paramæcia* and other Infusoria upon which to experiment, it is somewhat difficult to say.

The ranks of Protozoa which cause disease among higher animals are augmented this year by a new member of the Haplosporidia, *Rhinosporidium kinealyi*, described by MINCHIN & FANTHAM (296), this parasite producing tumours of the septum nasi of man. Much attention has been paid to the alleged Protozoan of variola and vaccinia, "Guarnieri's bodies" or *Cytortyces*. BOSC (32) continues to publish lengthy descriptions, accompanied by unconvincing figures, of his "bryocytic" maladies ("maladies à Protozoaires"), treating this time of small-pox and "*Plasmodium* [sic] variola." SEGEL (445) gives a long account of the parasite (as *Cytortyces*), elaborately illustrated with photomicrographs, which differs considerably from Calkin's account (*Zool. Rec.* 1904[58]). Further, he considers (446) that scarlet-fever is caused by an allied species, and (447) syphilis by yet another (*C. luis*), this last conclusion being very different from that arrived at by Schaudinn & Hoffmann and their supporters (see above). On the other hand, PROWAZEK (364 & 365), RICCIOLI (377) and others strongly assail the parasitic nature of Guarnieri's bodies. Finally, PROWAZEK (363), after a study of *Plasmodiophora*, finds that no comparison can be made between this parasite and the cell-inclusions ("Plimmer's bodies") in cancerous growths.

For various works on Geographical Distribution, the papers by BIGELOW, CASH & HOPKINSON, CONN, v. DADAY, EARLAND, HENDERSON, JENSEN, JØRGENSEN, LEMMERMANN, MASSART, MURRAY, NORDGAARD, PENARD, SIDEBOTTOM & WEST should be consulted; on Geological Distribution, those by CHAPMAN, CHAPMAN & HOWCHIN, CHECCHIA-RISPOLI, COCCO, DOUVILLÉ, FORNASINI, GOUGH, HUCKE, PREVER, POPOFSKY, READE &

HOLLAND, SCHLUMBERGER, SCHUBERT, SILVESTRI, SQUINABOL, WOJCIK, WRIGHT and others.

The Systematic description of *Gymnomyxa* is a subject upon which, as may be supposed, PENARD has plenty to say; in (334, 337 & 338) he adds to our knowledge of lacustrine Rhizopoda, and in (336) decides that there is a true genus *Amæba*, well-characterized, if difficult to diagnose. CASH & HOPKINSON (63) publish the first volume of a complete enumeration, with descriptions and good illustrations, of British fresh-water Rhizopods and Heliozoa. Among Foraminiferan memoirs calling for remark, two (359 & 360) represent PREVER's further contributions to our knowledge of the *Nummulitidae*. With SILVESTRI, this author also considers (361) the constitution and relationships of the *Orbitolina*. The last papers of SCHLUMBERGER—whose additions to the Foraminifera are tabulated by SILVESTRI (455) in his obituary notice—relate to the *Miliolida* (411), and to certain new genera, *Choffatella* (409) and, with DOUVILLÉ, *Lituonella* (413). SILVESTRI (449) offers some critical observations on the genus *Baculogypsea* and the *Orbitoidea*, on the debated form *Chapmanina gassinensis* (= *Dictyoconus aegyptiensis*) (451, 453, and, with PREVER, 361), and in (452) engages in a somewhat heated discussion with SCHUBERT (421), regarding the exact systematic value of two forms of *Cyclammina*. LEARDI in AIRAGHI (246) describes fully the genus *Rupertia* and its species, and CHECCHIA-RISPOLI (84) does the same for *Alveolina*. FORNASINI (145) reports on Adriatic *Textularida* and in (142, 143, 146 & 147) continues his useful occupation of "editing" d'Orbigny's species of Foraminifera and bringing his unpublished figures into the light of day. Among other papers notable from a Systematic standpoint are those of CHAPMAN & HOWCHIN (79), JENSEN (199), and SIDEBOTTOM (442 & 443).

As usual, the Radiolarian fauna grows apace. HACKER, in his valuable memoirs above referred to (169 & 170), diagnoses several new species of *Tripylaria*; but it is to the untiring SQUINABOL (463), ably supported by JØRGENSEN (203 & 204), that the task of supplying names for new Radiolaria has chiefly fallen. The first of Jørgensen's papers, it may be mentioned, is an earlier one, which appears to have been overlooked. As the result of his researches on the colonial forms (*Sphaerosa*), BRANDT (40) is now in a position to characterize and classify the constituent genera.

Fewer Systematic contributions to the remaining classes of Protozoa require mention. CRAWLEY (94) discusses the inter-relationships of the Sporozoa, and LAVERAN (240) reclassifies the "Hæmocytozoa," by the simple, though not necessarily the best, method of reducing the number and grade of forms regarded as distinct. The arrangement and classification of the Haplosporidia have been taken in hand with considerable success by CAULLERY & MESNIL (71), who have also observed certain new forms (67 & 68). Needless to say, many new Trypanosomes have been made known by different workers; when, however, as in the case of NOVY & MACNEAL's different "types" (323), the diagnoses are largely based on "cultural" characters, they cannot be regarded with much confidence. The scanty number of Rhynchoflagellate genera has received two conspicuous additions in *Craspedotella*, described by KOROFD (215) and *Radiosorum*, by MINGAZZINI (299); and, among the Ciliates, KOROFD's account (216) of new Tintinnids should be noted.

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II. BIOLOGY.

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Course of Mal de Caderas, Dourine, and Nagana as observed in mice and rabbits artificially infected with the respective Trypanosomes, HALBERSTAEDTER (171).

On the "unicité" of Dourine (caused by *T. equiperdum* = *T. evansi*) in Europe and Algeria, SCHNEIDER & BUFFARD (414).—On Dourine (6).

Trypanosomosis: (a) of cattle in Egyptian Soudan, caused by *T. nanum*, apparently restricted to *Bovidae*; and (b) of a Itang on Abyssinian frontier (possibly *T. dimorphon* ?), LAVERA Trypanosomosis of cattle (*T. nanum*) in Anglo-Egyptian Soudan (8).—Account of a distinct trypanosomosis in Cameroun, caused by *T. vivax* n. sp.; infection limited, apparently, to cattle, sheep and among domestic animals, ZIEMANN (518).

Occurrence of a trypanosomosis of horses, caused by *T. discolor*, in French Guinea (Upper Niger), CAZALBOU (74).—Existence of trypanosomosis of horses, zebras, mules, etc., at Macina (French Soudan), as "Soumaya," probably the same as Mbori, id. (75).

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Three varieties of Surra, perhaps caused by different races or species of parasite (*T. evansi*); Surra of India, S. of Mauritius, LAVERAN & MESNIL (243).—Identity of the Trypanosomes of Mbori (*T. evansi*) confirmed, LAVERAN (229).

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Inoculation of various birds with *T. padoa*, THIROUX (485).

Different behaviour (as regards immobilization and agglomeration) of various Mammalian and Avian sera on *Trypanosoma paddæ*, LEVADITI & SEVIN (261).

Cytolytic action of serum of white rat on *T. paddæ*, SEVIN (441).—Natural immunity of certain animals (guinea-pig, mouse) to *T. paddæ* is not due to the active, cytolytic properties of their sera, but to rapid phagocytic digestion : of others (white rats) due in part to both causes, LEVADITI & SEVIN (262).

Protozoa in reference to other diseases:—

Intestinal Flagellates (*Lambliæ*, *Trichomonas*) and diarrhœa, CASTELLANI (65).

Occurrence of "*Spirochæta*" *pallida* n. sp. (later *Treponema* n. g. *pallidum*) in true syphilitic lesions and products, probably the cause of this disease, SCHAUDINN & HOFFMANN (406).—THESING (481) apparently doubts not only whether "*Spirochæta*" *pallida* is a Protozoan, but also whether it is etiologically connected with syphilis.

SIEGEL (445) considers that "Guarnieri's bodies," as they occur in small-pox and vaccinia (*Cytoryctes variolæ* and *C. vaccinæ*) are the cause of those diseases; he gives a quite different account of them, however, from that of Calkins (Zool. Rec. 1904, No. 58). Further, he has found similar parasites in foot and mouth disease (*C. aphtharum* n. sp.), scarlet-fever, *C. scarlatinae* n. sp. (446), and also in syphilis, *C. luis* n. sp. (447), this last result being very different from those obtained by other workers.—"Bryocytic" maladies; small-pox and "*Plasmodium*" *variolæ*, BORC (32).

PROWAZEK, on the other hand (364 & 365), concludes that Guarnieri's bodies (*Cytoryctes*), as seen in vaccinia, are certainly not parasites.—RICCIOLI (377) also comes to the conclusion that the bodies taken by Siegel to represent Protozoa, and the cause of vaccinia (Guarnieri's corpuscles), are really artificial products; R. regards other bodies, found in the kidneys of infected rabbits, as Protozoa.

Bodies found in, and cultivated from carcinomatous tumours, which are thought to be *Plasmodiophoræ*, and dignified with a new specific name, *P. carcinomatia*, ROBERTSON & WADE (381).—No comparison can be rightly made between the cell-inclusions of cancerous growths ("Plimmer's bodies," etc.) and the Myxamœban parasites, *Plasmodiophora brassica*, PROWAZEK (363).—The cells of carcinoma are to be regarded as parasites "of the lowest animal nature," BUTLIN (59).

Occurrence of sickle-shaped formations, thought to be parasitic ("*Hæmameba*" *leucæmiæ magna*), in myelæmia and leucæmia, LÖWIT (271).

The organisms known as *Coccidioides immitis* and *C. pyogenes*, causing a disease of man in America, and thought by Rixford and Gilchrist to be a kind of Sporozoan, are really pathogenic moulds (Fungi), OPHÜLS (327).

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Vegetative multiplication, by plasmotomy, of *Mycetosporeidium* n. g., LÉGER & HESSE (251).

Schizogony in *Coccidium subepithelialis*; 8–11 merozoites, MOROFF & FIEBIGER (302).

Schizogony described in a new Mammalian Hæmogregarine (*H. balfouri*), BALFOUR (7).—Endogenous multiplication of *H. balfouri* (really schizogony?)

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Schizogony of various types in *Thelohania mænadis*, (344).

Asexual multiplication of *Blastulidium* by plasmotom process, recalling that of yeasts, PEREZ (340).

Schizogonous multiplication of the different types of *klossia*, KRASSILTSCHIK (220 & 221).

Mode of multiplication of *Trypanosoma gambiense* i (*Gl. palpalis*), GRAY & TULLOCH (164).—Multiple di- Trypanosomes, by rosette-formation, NOVY & MACNEA.

Multiplication of *Dunaliella salina* n. sp., HAMBURGER. The occurrence of longitudinal division in *Opalina ran* SCHOUTEDEN (418).

2. Sexual: gametes and conjugation.

On the various modes of sexual conjugation in Protozoa between conjugation and trophic (vegetative) life, STREMP. Sexual conjugation (karyogamy) in *Plasmodiophora*, character, PROWAZEK (363).

The gametes in *Clepsydrina ovata* are perfectly similar; conjugation is isogamous, SCHNITZLER (416).—Formatic (gametes) in the Monocystid Gregarines *Gonospora* distinctions between the male and female elements, and h conjugation, BRASIL (43): also in the case of *Monocysti* 44).

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Sexual forms (micro- and mega-gametocytes and mic new "*Hæmameba*," described, VASSAL (495).

Sexual conjugation (feebly anisogamous) in *Sphaeractino* CAULLERY & MESNIL (72).

Gametogony and conjugation in *Microklossia*, KRASSIL

Conjugation of gametes (practically equal) in *Dunaliella* (478).—Formation and behaviour of microzooids (probab *Hæmatococcus pluralis*, PEEBLES (333).—Gametogenesis (of flagellate gametes) in *Pseudospora volvocis*, descri (379).

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Conjugation in *Cryptochilum echini*, described, RUS (391).

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Nuclear division (mitotic) of the vegetative and of the generative nuclei of *Plasmodiophora*, PROWAZEK (363).

Nuclear division in *Amœba limax*, described and compared with other forms of mitosis, VAHLKAMPF (492).—Behaviour of the nuclear material, chromidial network, etc., during the process of encystment in *Arcella*; the formation of secondary nuclei, MARTINI (282).

Nuclear multiplication in the formation of the isospores and anisospores of *Thalassicolla*, BRANDT (39).

Nuclear changes and multiplication (mitotic) in sporoblast-formation in *Clepsydrina*; nuclear purification (maturation) of the sporoblasts themselves, prior to conjugation, SCHNITZLER (416).—Nuclear changes and divisions in the formation of sexual elements in *Gonospora* and *Urospora*, BRASIL (43); ditto in *Monocystis*, id. (44).

Nuclear changes and processes during multiplication and different phases in the life-cycle of *Trypanosoma lewisi* and *T. brucei*, described, PROWAZEK (362).

Fragmentation of the meganucleus in *Cryptochilum*, described, RUSSO & DI MAURO (389).—Behaviour of the meganuclei while uniting, during conjugation in *Glossatella*, FAURÉ-FREMIET (132).—Nuclear division in *Didinium*, affords perhaps "the earliest indication of a mitosis," THON (491).—Nuclear reduction and karyogamy in the conjugation of various Infusoria (*Didinium*, *Dileptus*), PRANDTL (358).

E. DEVELOPMENT; LIFE-CYCLE.

Sporangium and spore-formation in *Mycetosporidium* n. g., LÉGER & HESSE (251).

Possible occurrence of flagellate zoospores (comparable with isogametes of Foraminifera) in *Stannoma*, SCHULZE (431).

Cyst-formation and nuclear multiplication in *Amœba blatta*, SCHUBOTZ (427).—Formation of resting-cysts (hypocysts) in *A. limax*, VAHLKAMPF (492).—Encystment-process in *Arcella* described fully, MARTINI (282).

Mode of development of the chambered shell in different *Lagenida* comparatively studied, CUSHMAN (96).

Development of the isospores and anisospores in *Thalassicolla*, BRANDT (39).

Growth and development of the trophozoites of *Anchorina* from early stages; apparent absence of further developmental phases (multiplication) in digestive tube of *Cupitella*, CECONI (76).—"Cœlomic" cysts and sporozoites [really merozoites produced by schizogony] of *Aggregata inachi* n. sp., described, SMITH (462).—Cyst-, spore- and sporoduct-formation in *Clepsydrina*; occurrence of micro- and mega-spores, SCHNITZLER (416).

Sporulation in *Coccidium subepithelialis*, MOROFF & FIEBIGER (302).

Good photomicrographs of the sporozoites of malarial parasites, HILL & HAYDON (181), pl. 15.—Effects of different temperatures on the sporogony (sporoblast- and sporozoite-formation) of malarial parasites (*Laverania malarie* and *Plasmodium vivax*), JANCsó (193).

On a gregariniform (crescentic) phase in the malarial parasite, recalling a Hæmogregarine, BILLET (25).

Alleged stages of development of a new Mammalian Hæmogregarine (*H. gerbilli*) in a louse (*Hamatopinus* sp.); occurrence of cysts with zygotes [spores?], containing sporozoites, which are liberated and become active on transferring to blood, CHRISTOPHERS (86).

Cysts and sporozoites of a Protozoan, probably phases of a Hæmogregarine parasitic in *Testudo*, described in ticks (*Hyalomma*) taken from that tortoise, LAVERAN & NÈGRE (244).

Curious morphological forms of *Piroplasma bigeminum*, in the tick, according to KOCH (214); also forms of *Trypanosoma* (presumably

bractii, in Tsetse-flies *Gl. fusc.*.—Development of Flag Leishman-Donovan parasites *Piroplasma donovani* in cat blood; formation of a vacuole, from which the flagella originate, CHRISTOPHER 65, and LEISHMAN & STATHAN.

Cysts and spores of *Myxobolus neuridius* and *Henneguya* described, SCHUBERG & SCHÖDER 430.—Characteristic spores of *Myxogystis mrazeki* n. sp., HESSE 179.—Necrosis, and condition of diffuse infiltration in, PEREZ 344.—*Thelohanusia menadia*, PEREZ 344.

Development and sporulation of *Sphaeractinomyces* and construction of the life-cycle, CAULLERY & MESSIL 72.

Sporulation and development of various Haplosporidia as described, CAULLERY & MESSIL 71.—Sporulation and sporidium blastula described, CRAWLEY 93.—Pansporoblast formation in the cysts of *Rhinosporidium* described, MISCE (286).

Curious mode of sporogony in *Microklossia*; two successive periods, the first apparently endosporous in character, a autoinfection, the second only giving rise to definite spores: KRASHILTSCHIK 221.

Zoospores of *Dunaliella* n. g., and their division, described (478).—Phases in the life-history of *Pseudospora volva* flagellate, and radial forms, described, ROBERTSON 379.

Development and life-history of *Trypanosoma lewisi* in important phases undergone in an Invertebrate host *spinulosus*, PROWAZEK (362).—Evolutive phases of *Tryp Trypanosoma* spp. in leeches (*Hemiclepsis*) described, F. According to THIROUX (483), there is no outogenetic connection *Trypanosoma paddae* and *Halteridium danilewskyi*, both *Padda*.

Description of trypaniform phases in the life-cycle of *Trycheta pallidum* (= *Trypanosoma luis*), KRZYŻEŁTOWICZ & S.

Various developmental phases in "*Trypanosoma*" *balbi* PERRIN (345). [The Rec. does not place much reliance on phases, which are more likely abnormal or artificial.]

F. GROUP RELATIONSHIPS; CLASSIFICATORY

Classification of Rhizopods: in this designation CASH & F do not include Foraminifera, but make two orders [1] Conchulina; the former includes *Lobosa*, *Vampyrellida*, (with *Biomyxa* and *Chlamydomyxa*), the latter the Testaceae SCHULZE (431) finds that certain families of Haeck "Ceratomyxa," namely, the *Psammynidae* and the *Stannomyidae*, one or two other genera, *Ceratomyxa* and *Psammophyllum* of them are not Metazoa, but plasmodium-forming Protozoa, which belong to the Rhizopods and allies to the Foraminifera.

On the earliest indications of the phylogenetic development of dimorphism, in the Foraminifera; "the microspheric form as some steps higher on the phylogenetic ladder than the n RHUMBLER (375).—General remarks on the classification of by shell-form and structure, SCHLUMBERGER & DOUVILLÉ (4

Classification and inter-relationships of the *Heterostegina* *Spiroclypeus* n. g., DOUVILLÉ (113).—On the constitution of the *Spiraculidae* sub-family, *Orbitoidina*, SILVESTRI (449).

Materials for a classification of the colony-forming Radiolarians: 2 families (*Sphaerosoida* and *Collopharidea*) recognised

racteristics and constituent forms, BRANDT (40).—Phylogeny and classification of the Monopylaria, JØRGENSEN (204).

Classification, origin, and inter-relationships of the different orders of Sporozoa considered at length, CRAWLEY (94).—Classification of the Hæmocytozoa (Hæmosporidia); LAVERAN (240) places all the known forms in 3 genera, *Hæmamaeba*, *Hæmogregarina*, and *Piroplasma*.

On the affinities of *Piroplasma donovani* (cultural forms) with Herpetomonads, CHRISTOPHERS (85) and LEISHMAN & STATHAM (253).

Classification of the *Microsporidia*, PEREZ (344).—Systematic position of *Myxocystis* defined, HESSE (177 & 179).

Relationships and systematic position of the Actinomyxidia discussed, CAULLERY & MESNIL (72).

Constitution of the order Haplosporidia; mutual relationships of the different parasites usually considered as "Sporozoa incertæ sedis," CAULLERY & MESNIL (71). The authors recognize 3 definite families: (a) *Haplosporidiidae*, including *Haplosporidium* and *Urosporidium*, (b) *Bertramidae* for *Bertramia* and (provisionally) *Ichthyosporidium*, and (c) *Celosporidiidae* for *Celosporidium*, *Polycaryum*, and (perhaps) *Blastulidium*. *Scheviakovella* and various Serosporidia are probably closely related to this order, *Joyeuxella*, *Metschnikovella*, and other forms less so.

G. MISCELLANEA.

1. Cultivation and infection.

Methods of obtaining and cultivating pond-life Protozoa (*Amæba*, *Paramecium*, *Euglena* and others) for laboratory purposes, SMITH (461).

Artificial cultivation of: *Amæba*, MUSGRAVE & CLEGG (308); *Amæba limax* in various media, VAHLKAMPF (492); the *Amæba* of tropical dysentery (*Entamæba histolytica*), LESAGE (259).

Successful artificial cultivation, and behaviour and morphological characters of the parasites thus obtained, in the case of: *Trypanosoma lewini* and *T. brucei*, SMEDLEY (460); *T. duttoni*, THIROUX (486); *T. padde*, THIROUX (485); Trypanosomes of birds, NOVY & MCNEAL (323).

Cultivation of Flagellate ("Trypanosome") forms from the Leishman-Donovan body (*Piroplasma donovani*), CHATTERJEE (80).—Cultures of Flagellate forms from Leishman-Donovan bodies develop most rapidly in an acid medium; hence the probability of some blood-sucking Insect conveying the infection, ROGERS (386).—MACKIE (274) thinks the Leishman-Donovan parasites are transmitted rather by the agency of water.

Transmission of *Piroplasma canis* by different species of tick in different parts (e.g. *Ixodes reduvius*, Italy (1), *Dermacentor reticulatus*, France, *Hæmaphysalis leachi*, South Africa, NUTTALL & GRAHAM-SMITH (325).—Transmission of bovine piroplasmiasis (*P. bigeminum*) by the progeny of ticks (*Rhipicephalus decoloratus*), LAVERAN & VALLÉE (245).—Infection of East African Coast fever (*Piroplasma parvum*) transmitted by *Rhipicephalus appendiculatus*, THEILER (480).

El-Debab, a trypanosomiasis of North Africa, probably conveyed by *Tabanus (Atylotus) nemoralis* or *T. tomentosus*, SERGENT (439).—Infection of a dog by contagion with the Trypanosome of North-African Surra (not Dourine), ROGER (383).

Probability of transmission of *Hæmogregarina mauritanica* from one *Testudo* to another, by means of ticks (*Hyalomma*), but only by the hereditary infection of the tick-progeny, NICOLLE & COMTE (316).

Review of cases of true hereditary infection by Protozoa, MESNIL (293).

2. Technique.

Discussion on various methods of staining Protozoa, GIEMSA (157) and MARINO (280).

Eocene ("scaglia" and calcareous), Central Appennines
PREVER (360).

Eocene, S. Genesio (near Turin), *Rupertia* n. spp., LEA
(246).

Eocene, Talamonchi (Anghiari), *Lepidocyclina* and othe
SILVESTRI (450).

Eocene, Syracuse, *Nummulitida*, CHECCHIA-RISPOLI (82).

Eocene, Sicily (Sciacca), *Lepidocyclina selinuntina*, CH
(81).

Eocene, Sicily, *Alveolina* spp., CHECCHIA-RISPOLI (84).

Eocene limestones, Somaliland, Foraminifera (chief
NEWTON (314).

Secondary:—Eocene to Cretaceous, France, new *Mili*
BERGER (411).

Cretaceous (Gault), Isle of Wight, Foraminifera, REA
(372).

Cretaceous (Gault), Bartin (Pomerania), Foraminifera, H

Cretaceous (Gault), Portugal, also Voreppe (Isère), *Chof*
n. g., n. sp., SCHLUMBERGER (409).

Irish Greensand, Foraminifera, GOUGH (161).

Lower Greensand, Little Coxwell, near Faringdon, Foran
(101), also WRIGHT (510).

Cretaceous, Meandre (Isère), *Orbitoides* spp., PAQUIER (3

Cretaceous, Monte Euganei, Radiolaria, SQUINABOL (463).

Cretaceous (serpentine argilloschists), Appennines, Fo
Radiolaria, SACCO (396).

Cretaceous, deep-boring, Bremen, Foraminifera, JORDAN

Cretaceous, Greece (Peloponesia), *Nummulitida*, NÉGRIS

Cretaceous, Persia, Foraminifera (*Loftusia persica*, *L. mor*
Omphalocyclus macropora), DOUVILLÉ (108 & 109).

Primary:—Permo-Carboniferous limestones, New Sout
minifera, CHAPMAN & HOWCHIN (79).

C. PARASITIC (including commensalism)

Protozoa:—In *Amæba terricola*, nucleus, *Nucleoph*
Fungus), PENARD (335).

Symbiotic with *Pelomyxa*, the well-known Bacterial rod
Cladothrix pelomyxæ n. sp., VELEY (496).

Ectoparasitic on *Amæba*, various species ("Ouramæba"
ments (*Entomophthoraceæ* or *Saprolegniaceæ*), PENARD (3

In *Pseudodistugia horrida*, an Infusorian parasite of und
PENARD (337).

Chaetopoda:—In *Limnodrilus hoffmeisteri*, intestine at
Myxocystis mrazeki n. sp., HESSE (177 & 179).

In *Mesenchytræus flavus* (freshwater), intestinal epith
sporidium vejdoskii n. sp., CAULLERY & MERNIL (67).

In *Potamilla torelli*, body-cavity, *H. potamilla* n. sp.,
MERNIL (67).

In *Salmacina dysteri*, body-cavity, *H. marchouzi* n. sp.
MERNIL (67).

In *Syllis gracilis*, body-cavity, *Urosporidium fuliginos*
CAULLERY & MERNIL (67).

Crustacea:—In *Balanus amaryllis*, body-cavity, *Gl*
n. sp., PEREZ (343).

In *Carcinus maenas*, musculature (except of heart), *Nosema pulvis* n. sp., PEREZ (341).

In spider-crabs (*Inachus dorsettensis* and *I. scorpio*), wall of the intestine, projecting into the body-cavity, *Aggregata inachi* n. sp., SMITH (462).

Insecta:—In the following South Russian Lepidoptera: *Aporia crategi*, *Botys sticticalis*, *Emmelia trabealis*, *Heliothis dipsaceus*, *Hyponomeuta evonymella*, *H. malinella*, and *Mamestra oleracea*, in the blood-channels, fat-bodies and other organs and tissues, *Microklossia prima* n. g., n. sp., KRASSILSTCHIK (219).

In *Blattella germanica*, Malpighian tubules, *Celosporidium blattellæ* n. sp., CRAWLEY (93).

In *Batis rhodani* (larvæ), fat-bodies chiefly, *Nosema vayssierei* n. sp., HESSE (178).

In *Bombyx mori*, body spaces and blood-channels, *Herpetomonas bombycis* n. sp., LEVADITI (260).

In *Ceratopogon solstitialis* (larvæ), intestine, *Tæniocystis mira* n. g., n. sp., LÉGER (248).

In *Dendarus tristis*, intestine, *Gregarina cavalierina* n. sp., BLANCHARD (29).

In a louse (*Hæmatopinus spinulosus*), many or most of the organs (*via* the circulation), *Trypanosoma lewisi*, PROWAZEK (362).—In *H. sp.*, intestinal diverticula and body-cavity, cysts of *Hæmogregarina gerbilli* n. sp., CHRISTOPHERS (86).

In *Helenophorus collaris*, intestine, *Stylorhynchus gladiator* n. sp., BLANCHARD (29).

In *Melophagus ovinus* (sheep-louse), gut, Trypanosome-like parasites, PFEIFFER (349).

In *Omophilus brevicollis*, Malpighian tubes, *Thelohania cepedei* n. sp., HESSE (178).

In *Otiorhynchus fuscipes*, abdominal cavity, *Nosema longifilum* n. sp., id. (178).—In *O. f.*, intestinal epithelium, *Mycetosporeidium talpa* n. g., n. sp., LÉGER & HESSE (251).

In Termites (unspecified), from Chili, intestine, *Calonympha grassii* n. g., n. sp., and *Devescovina striata* n. g., n. sp., FOA (141).

Arachnida:—In *Hyalomma ægyptium*, intestine, cysts and sporozoites of a Protozoan (probably phases in a *Hæmogregarina* of *Testudo*), LAVERAN & NÈGRE (244).

Pisces:—In bream (*Abramus*), blood, *Trypanoplasma guernei*, n. sp., BRUMPT (55).

In *Alosa finta*, branchial filaments and tissue, a new Myxosporidian, unsp., MAZZARELLI (286); named, *Branchiophaga*, n. g., id. (287).

In *Bothus rhombus*, blood, *Hæmogregarina bothi* n. sp. and *Trypanosoma b.* n. sp., LEBAILLY (247).

In *Box boops*, œsophagus and stomach, *Trypanoplasma intestinalis* n. sp., LÉGER (249).

In brook-trout, nervous system, *Myxobolus neurobius* n. sp.; in subcutaneous tissue, *Henneguya nüsslini* n. sp., SCHUBERG & SCHRÖDER (420).

In carp, subepithelial layer of the intestine, *Coccidium subepithelialis* n. sp., MOROFF & FIEBIGER (302).

In *Clarias (Silurus) clarias*, Cochin China, blood, *Trypanosoma clariae* n. sp., MONTEL (300).

In *Cobitis barbatula*, kidneys and bladder, *Henneguya légeri* and *Myxidium barbatulæ* n. spp., CÉPÈDE (77).

In *Colossoma brachypoma*, intestine, *Nyctotherus piscicola* n. sp., v. DADAY (98).

In *Crenilabrus melops*, forming a dermal tumour, *Ichthyosporidium phymogenes* n. g., n. sp., CAULLERY & MESNIL (68).

In *Liparis vulgaris* and *Motella mustela*, glandular can and pyloric cæca, *Ichthyosporidium gasterophilum* n. sp. MESNIL (68).

In pompano (*Trachinotus carolinus*), red drum (*Sciaenops sheepshead* (*Archosargus probatocephalus*), stomach and pectoral fins, *Myxobolus* (*Henneguya*) sp., LINTON (265).

In a Siluroid fish (*Saccobranchius fossilis*), blood, *Trypanbranchi* n. sp., CASTELLANI & WILLEY (66).

Amphibia:—In frogs (incert.) from Madagascar, blood, *neireti* n. sp., LAVERAN (236).

In *Proteus anguineus*, renal tubules, *Chloromyxum protei* (205).

In *Rana angolensis* (Transvaal), blood, *Hæmogregarina* LAVERAN (236).—In *R. catesbiana*, blood, *H. catesbianæ* n. (469).—In *R. c.* and *R. clamata*, blood, *Karyolysus clamata* (468).—In *R. esculenta*, blood, *Trypanosoma rotatorium* vs SERGENT (438).

In newt (*Triton cristatus*), red blood-corpuscles, *Lanke* n. sp., FANTHAM (126).

Reptilia:—In *Testudo pardalis*, blood, "*Hæmamæba*" LAVERAN (238).

In *Varanus niloticus*, blood, *Hæmogregarina varani* n. (237).

Aves:—Occurrence of "*Hæmamæba*" and Trypanosoma North African birds, SERGENT (436).

In various birds (*Agelaius phæniceus*, *Colaptes auratus*, *Icterus galbula*, *Melospiza fasciata*, *Merula migratoria domestica*, *Sialia sialis*, and *Zenaidura macroura*), blood avium, NOVY & MCNEAL (323).

In *Buteo lineatus*, blood, *Trypanosoma mesnili* n. sp., N (323).

In *Spinus tristis*, blood, *T. laverani* n. sp., id. (323).

In *Meleagris gallopavo domestica* (turkey), probably in hæmatids, "*Hæmamæba*" *smithi* n. sp., LAVERAN & LUCET

In *Perdix cinerea*, blood, "*H.*" *relicta*, LAVERAN & LUCET

In *Polypterus germani* (Annam), blood, *Trypanosoma* n. sp., VASSAL (493).

In a swallow, blood, "*Hæmamæba*" *danilewskyi* var. *hir* SERGENT (436).

In an African dove (*Treron calva*), blood, a Trypanosoma (501).

Mammalia:—In cattle (apparently restricted to *Trypanosoma nanum* n. sp., LAVERAN (235).

In dogs (India), white blood-corpuscles, a new "*Leucocytozoon*" *canis*, JAMES (190) and BENTLEY (20).

In *Arvicola nivialis*, intestine, *Coccidium arvicole* n. sp., (155).

In *Jaculus orientalis* (gerboa), blood, *Hæmogregarina* LAVERAN (227); also in *J. gordonii* (*J. j.*), BALFOUR (7).

In *Mus decumanus* (Norway), leucocytes, a Hæmatos identical with *Hæmogregarina balfouri*, BALFOUR (7).—1 (Senegal), blood, *Trypanosoma duttoni* n. sp., THIROUX (

In *Myoxus glis* (dormouse), blood, *Trypanosoma bla* BRUMPT (55).

In an Indian rat (*Gerbillus indicus*), blood (red-corpuscles), *Hæmogregarina gerbilli* n. sp., CHRISTOPHERS (86).

In *Sciurus griseimanus* (Annam squirrel), blood-corpuscles, a new "*Hæmameba*," VASSAL (494 & 495).

In *Talpa europæa*, blood, *Trypanosoma* sp., probably new, PETRIE (348).—In moles, blood, a new *Hæmatozoan*, perhaps a *Piroplasma*, GRAHAM-SMITH (163).

In badger (*Meles taxus*), blood, *T. pestanai* n. sp., BETTENCOURT & FRANÇA (22).

In bats (*Vesperugo pipistrellus*, *V. nattereri*, and *V. serotinus*), blood, *T. dionisii* n. sp., id. (23).

In *Myotis murinus*, blood, *Trypanosoma nicolleurum* n. sp., SERGENT (435).

In *Pipistrellus pipistrellus*, blood, *Trypanosoma* sp., PETRIE (348).

In bats (*Vesperugo pipistrellus*), blood, malarial parasites (ring-forms) and Trypanosomes, described but not specified, KISSKALT (211).

In *Vespertilio kuhli*, blood, *Trypanosoma nicolleurum* and *T. vespertilionis* (prov. n. sp.), SERGENT (435).

In *Macacus rhesus*, thigh muscles, a *Sarcosporidium*, DE KORTÉ (218).

In Man, septum nasi, a new Haplosporidian, *Rhinosporidium kineuliyi*, MINCHIN & FANTHAM (298).

In human fæces, *Entameba undulans* n. sp., and *Nyctotherus africanus* n. sp., CASTELLANI (64).

IV. SYSTEMATIC.

[Note. Only new forms, forms whose occurrence is of special interest, and forms described and figured are mentioned specifically.]

A. PROTOZOA IN GENERAL.

[For lists of Protozoa from various localities, see under Plankton (II. c. 1) and Distribution (III. A).]

B. GYMNOXYXA.

1. MYCETOZOA.

(a) Protomyxidea:—

Arachnula vesiculata n. sp., occurrence and description, PENARD (337) p. 612, pl. 14, figg. 31 & 32.

Gymnophrys cometa, remarks on, PENARD (337) p. 615, pl. 14, figg. 33–35.

(b) Mycetozoides:—

Plasmodiophora brassicae, description of, chiefly with regard to nuclear division and conjugation, PROWAZEK (363) pp. 396–410, pl. 7.

Allied to Mycetozoa, *Mycetosporidium* n. g. *talpa* n. sp., vegetative plasmodia, and sporulation of, described, LÉGER & HESSE (251) pp. 92–94.

2. RHIZOPODA.

Rhizopoda, general account of morphology, physiology, distribution and classification of; systematic enumeration of British forms, with full synonymy, CASH & HOPKINSON (63).

Rhizopoda: from the Swiss Lakes, occurrence and description, with text-figg. for all species, PENARD (338); White Mountain region, New Hampshire, notes on, CUSHMAN & HENDERSON (97) pp. 147–155;

and Heliozoa from deep-lakes, interesting remarks on, & PENARD (334).

Xenophyophora **nom. nov.** for a remarkable new group SCHULZE (431) among the Rhizopods and allied with the It includes (so far) the families *Psamminidae* and *Hckl.*, in a modified sense. Classification, pp. 46-47 "Valdivia" Material, Deep-Sea Expedition.)

Psamminidae, with no "linellæ."

Cerelasma, p. 21, *C. gyrospheera*, p. 21, pl. 2, figg. 5-11, p.

C. lamellosa, p. 24, pl. 3, fig. 3, described, SCHULZE

Holopsamma, p. 25, *H. cretaceum*, p. 26, pl. 3, figg. 4-6, p. 27, described, SCHULZE (431).

Psammetta **n. g.** p. 6, *P. erythrocytomorpha* **n. sp.**, p. figg. 1-4, described, SCHULZE (431).

Psammina globigerina, p. 18, *P. platina*, p. 20, *P. nana* described, SCHULZE (431).

Psammapemma calcareum, p. 28, *P. radiolarium*, p. 27, notes SCHULZE (431).

Stannomidae, with "linellæ."

Stannarium alatum, p. 45, *S. concretum*, p. 46, notes SCHULZE (431).

Stannoma coralloides, p. 35, pl. 4, fig. 4, *S. dendroides*, p. 1-3, 5-10, described, SCHULZE (431).

Stannophyllum, p. 36, *S. zonarium*, p. 37, pl. 5, pl. 6, figg. *larium*, p. 41, pl. 7, fig. 1, *S. reticulatum*, p. 44, pl. *globigerinum*, p. 43, pl. 7, figg. 2 & 3, described, SCH

(a) *Lobosa*:—

Amæba, existence of a true genus (comprising numerous characterized if somewhat difficult to diagnose, and from the host of amœboid organisms collectively included "Amœbæ," PENARD (336) pp. 401-409; *A. angulata* text-figg. 1-5, *A. humilis* **n. sp.**, p. 331, text-figg. 9-**n. sp.**, p. 329, text-figg. 6-8, described, SCHOUTEDEN (4 pp. 6-23, pl. 1, figg. 1-10, pl. 2, *A. proteus*, pp. 23-39, p. general description of, SCHUBOTZ (427); *A. doylei* nutrition, etc., and trophic nuclear changes in, de SHELMEYER (312) pp. 147-165, pl. 7, 13 text-figg.; *A. li* nuclear division, and biology, described, also artificial VAHLKAMPF (492) pp. 167-220, pl. 6; *A. salina* **n. sp.** pseudopods, occurrence and diagnosis, HAMBURGER 128, pl. 6, figg. 18-22; *A. terricola*, structure and membrane, cytoplasm, and manner of locomotion in figg. 1-8, *A. t.*, effects on, produced by the attack of *amæbae*, p. 195, figg. 9-12, *A. t.*, p. 199, fig. 13, *A. pa* p. 201, fig. 14, *A. similis*, p. 201, fig. 15, *A. sphaeront* fig. 16, *A. fibrillosa*, p. 202, fig. 17, *A. alba*, p. 203, fig. p. 204, fig. 19, and *A. vesiculata*, p. 204, fig. 20, diagnostic characters, PENARD (335).

Arcella rota **n. sp.**, p. 9, pl. 1, figg. 1-5, *A. marginata* **n. sp.** figg. 6-8, Paraguay, described, v. DADAY (99); *A. vulg* encystment, degeneration appearances, and formation nuclei in, described, MARTINI (282) pp. 574-619, pls. 28 *compressa* **n. var.**, occurrence and diagnosis, CASH & I p. 138, text-fig. 28.

Centropyxis aculeata **var. spinosa** **n. var.**, occurrence & CASH & HOPKINSON (63) p. 135, pl. 16, fig. 15, text-fig.

Cochliopodium crassiusculum **n. sp.**, p. 592, pl. 13, fig. 7,

- p. 596, pl. 13, fig. 11, described, PENARD (337); *C. pellucidum*, minute structure of, and varieties of pseudopodia in, FAURÉ-FREMIET (129) pp. 497-499; *C. p.*, 2 varieties distinguished, var. *putrinum* α nov. and var. *putrinum* β nov., also occurrence of fuchsinophilous grains described, representing an internal secretion, id. (130) pp. 906-907; *C. p.*, full detailed account of, id. (138) pp. 1-68, pls. 1 & 2, 21 text-figs.
- Diffugia umpullula* n. sp., occurrence and note on, ZACHARIAS (511) p. 228; *D. lobostoma*, p. 14, var. *impressa* n. var., p. 15, pl. 1, figg. 11-14, *D. urceolata* var. *quadrialata* n. var., p. 17, pl. 1, fig. 15, var. *ventricosa* n. var., p. 17, pl. 1, fig. 16, Paraguay, diagnosed, v. DADAY (99); *D. piriformis*, remarks on, PENARD (337) p. 596, pl. 13, figg. 12-14; *D. prestans* n. sp., p. 25, 1 fig., *D. elongata* n. sp., p. 33, 1 fig., Swiss lakes, diagnosed, PENARD (338); *D.* (n. sp. ?) from Loch Ness, note on, PENARD (334) p. 599, text-fig. 1.
- Dinamæba mirabilis*, notes on, PENARD (337) p. 590, pl. 13, figg. 8-10.
- Entamæba (histolytica)*, judging from cultural characters of dysentery, successfully cultivated, LESAGE (259) pp. 9-16, pls. 1 & 2; *E. [?] undulans* n. sp., remarkable for the possession of an undulating membrane, occurrence and note on, CASTELLANI (64) pp. 67-69, text-figg. 3-5. [It is by no means unlikely that an abnormal form of *Trichomonas* is in question.]
- Nebela bicornis* n. sp., plankton, Scottish lochs, diagnosed, WEST (503) p. 91, 1 text-fig.; *N. bigibbosa*, remarks on, PENARD (337), p. 600, pl. 13, figg. 16-19.
- "*Ouramæba*," really an ordinary *Amæba* (spp. var.) on which certain Fungal filaments (*Entomophthoraceæ* or *Saprolegniaceæ*) are ectoparasitic, PENARD (337) pp. 585-588, pl. 13, figg. 1-6.
- Paulinella chromatophora*, description of, chiefly with regard to the structure of the shell, and the chromatophores, PENARD (337) pp. 603-610, pl. 14, figg. 20-28; *P. c.*, occurrence Virginia, U.S.A., and notes on, KEPNER (209) pp. 128 & 129, 1 fig.
- Pelomyxa palustris*, study of the symbiotic Bacteria (*Cladothrix pelomyxæ* n. sp.) and the refringent bodies and their importance, in, VELEY (496) pp. 374-395, pls. 36-38; *P. penardi* n. sp., occurrence and diagnosis, RUMBLER (376) p. 50, text-figg. 2, 6, 10, 11.
- Placocysta jurassica* n. sp., diagnosis and occurrence, PENARD (337) p. 611, pl. 14, figg. 29 & 30.
- Quadrula irregularis*, remarks on, PENARD (337) p. 559, pl. 13, fig. 15.

(b) Foraminifera:—

- Arenaceous Foraminifera, comprehensive account of morphology of, and general conclusions arrived at, KEMNA (207) pp. xi-xlviii.
- Foraminifera from:—Bermuda Banks (shoal-water deposits), BIGELOW (24); shore-sand, Bognor, Sussex, EARLAND (119); Norwegian fiords, listed, NORDGAARD (321) p. 192; East Finmark, NORMAN (322); Island of Delos (Grecian Archipelago), SIDEBOTTOM (442).
- †Foraminifera, mostly lists, from:—Pleistocene clays, Taranto (Terra d'Otranto), BASSANI (14) p. 57; Upper Eocene, Vicentin, *Nummulites* and *Orthophragmina* in abundance, corresponding with those at Biarritz, BOUSSAC (36); Miocene, Santo (New Hebrides), CHAPMAN (78); Eocene (Nummulitic limestone), Depta. Aude and Hérault, notes on, DONCIEUX (104); Tertiaries, Borneo, noted and tabulated, DOUVILLÉ (113); Pliocene (or Recent), Rimini (Adriatic), notes on, and figures from d'Orbigny ("Planches inédites"), FORNASINI (146); Irish Greensand, GOUGH (161); Glacial deposits (Cretaceous and Tertiary forms), Frankfurt a O., HUCKE (186); Cretaceous (Gault), Bartin (Pomerania), id. (187); Miocene and Cretaceous, deep-boring

Fabularia discolithes, A and B forms, Eocene, described, (411) p. 129, pl. 3, figg. 37 & 38, text-figg. 22-25.

†*Fronclularia ampulla* n. sp., Gault, Bartin, diagnosed, HUC pl. 23, fig. 10; *F. woodwardi*, occurrence and note HOWCHIN (79) p. 16, pl. 3, fig. 2.

†*Fusulina* (Carboniferous), occurrence of twinned-shells i (407) p. 116.

†*Gaudryina pupoides*, Ravenna, Adriatic, described, F p. 145, pl. O, figg. 16-19.

†*Geinitzina triangularis* n. sp., p. 16, pl. 2, figg. 9 & 10, G p. 17, pl. 4, fig. 3, occurrence and diagnosis, CHAPMAN & *Globigerina globularis* (cf. *bulloides*) pl. 1, fig. 1, *G. trigona* pl. 1, fig. 2, †*G. depressa* (cf. *Rotalina* sp.) pl. 1, fig. 3, *cretacea*, pl. 1, fig. 4, *G. parisiensis* (cf. *Pulvinulina* & notes on these spp. originally described by d'Orbigny a from "Planches inédites," FORNABINI (142) pp. 140 *gerina*-ooze, Pacific Ocean, composition and notes on, F pls. 1 & 2.

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- Gonospora varia*, anisogamous gametes and conjugatio BRASIL (43) pp. 17-38, pl. 2, figg. 5, 15-17, 2 text-
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- Herpetomonas bombycis* n. sp., occurrence and morphologic LEVADITI (260) pp. 631-634, 11 figg.
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CORRIGENDA.

INSECTA, p. 86, line 8 from bottom, for *corei* read *c*
 „ p. 160, „ 12 „ „ for *Danacaca* re

END OF THE FORTY-SECOND VOLUME.

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